

EXHIBIT B36

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IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF NEW JERSEY

IN RE: JOHNSON & JOHNSON
TALCUM POWDER PRODUCTS
MARKETING, SALES PRACTICES,
AND PRODUCTS LIABILITY
LITIGATION

Case No. 16-2738
THIS DOCUMENT RELATES TO (FLW) (LHG)
ALL CASES

MDL Docket No. 2738

Friday, March 29, 2019

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The video deposition of MICHAEL BIRRER, M.D., Ph.D., taken pursuant to notice, was held at the law offices of Butler Snow, LLP, One Federal Place, Suite 1000, 1819 Fifth Avenue North, Birmingham, Alabama, commencing at approximately 9:03 a.m., on the above date, before Lois Anne Robinson, Registered Diplomate Reporter, Certified Realtime Reporter, and Notary Public for the State of Alabama.

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2	COUNSEL FOR PLAINTIFFS' STEERING COMMITTEE:	2	EXAMINATION
3	BEASLEY ALLEN LAW FIRM	3	By Ms. Thompson
4	218 Commerce Street	10	
5	Montgomery, Alabama 36104	4	By Ms. Curry
6	BY: Margaret M. Thompson,	424	
7	M.D., J.D., MPAFF	5	
8	Margaret.thompson@beasleyallen.com	6	*****
9	Sydney Everett, Esquire	7	EXHIBITS
10	Sydney.everett@beasleyallen.com	8	1 Expert report of Michael Birrer, M.D., Ph.D. 20
11	ROBINSON CALCAGNIE, INC.	9	
12	19 Corporate Plaza Drive	10	2 Curriculum vitae of Michael Birrer, M.D., Ph.D. 21
13	Newport Beach, California 92660	11	
14	BY: Cynthia L. Garber, Esquire	12	3 Defendants' Response to Plaintiff's Document 21
15	Cgarber@robinsonfirm.com	13	Requests contained in Notice
16	RESTAINO LAW, LLC	14	
17	130 Forest Street	15	4 Health Canada - Draft Screening Assessment - Talc 48
18	Denver, Colorado 80220	16	
19	BY: John M. Restaino, JR., DPM, ESQ.	17	5 FDA letter to Samuel Epstein regarding Citizen 49
20	Jrestaino@restainollc.com	18	Petitions
21	NAPOLI SHKOLNIK PLLC	19	
22	400 Broadway Road, Suite 305	20	6 IARC Monographs on the Evaluation of Carcinogenic 50
23	Melville, New York 11747	21	Risks to Humans
24	BY: ALASTAIR J. M. FINDEIS, ESQUIRE	22	
	Afindeis@napolilaw.com	23	7 "Weight of Evidence: General Principles and 53
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4	SEYFARTH SHAW LLP	4	
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6	Atlanta, Georgia 30309	6	
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8	Ebarton@seyfarth.com	8	
9	COUNSEL FOR PTI:	9	11 "Inflammation and cancer: Back to Virchow?" 153
10	TUCKER ELLIS, LLP	10	(Fran Balkwill, Alberto Mantovani)
11	233 S. Wacker Drive, Suite 6950	11	
12	Chicago, Illinois 60606-9997	12	12 Free Radical Biology & Medicine, Review Article 162
13	BY: JAMES W. MIZGALA, ESQUIRE	13	"Oxidative stress, inflammation, and cancer: How are
14	James.mizgala@tuckerellis.com	14	they linked?" (Simone Reuter, Gupta, et al.)
15	VIDEOGRAPHER:	15	
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19	LOIS ANNE ROBINSON, RPR, RDR, CRR	19	14 Federal Register/ Vol. 81, No. 243/ Monday, 199
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21		21	
22		22	15 "The relationship between perineal cosmetic talc 205
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<p>1 I N D E X - (continued)</p> <p>2</p> <p>3 22 "The Analysis of Johnson & Johnson's Historical 281 4 Baby Powder & Shower to Shower Products from the 5 1960's for Amphibole Asbestos" (Longo, Rigler) 6 November 14, 2018</p> <p>7</p> <p>8 23 "The Analysis of Johnson & Johnson's Historical 282 9 Product Containers and Imerys' Historical Railroad 10 Car Samples from the 1960's to the Early 2000's for 11 Amphibole Asbestos" (Longo, Rigler) January 15, 2019</p> <p>12</p> <p>13 24 BMJ: "Johnson & Johnson knew for decades talcum 287 14 powder contained asbestos, reports allege" (Owen Dyer)</p> <p>15</p> <p>16 25 "Correspondence - Erratum: Smooth reference 294 17 equations for slow vital capacity and flow-volume 18 curve indexes"</p> <p>19</p> <p>20 26 Toxicology and Applied Pharmacology - "Mechanistic 301 21 in vitro studies: What they have told us about 22 carcinogenic properties of elongated mineral particles 23 (EMPs)" (Brooke Mossman)</p> <p>24</p>	<p>1 I N D E X - (Continued)</p> <p>2</p> <p>3 34 "Pycnogenol reduces Talc-induced Neoplastic 406 4 Transformation in Human Ovarian Cell Cultures" 4 (Buz'Zard)</p> <p>5</p> <p>6 35 Toxicology in Vitro - "The primary role of 409 7 iron-mediated lipid peroxidation in the differential 8 cytotoxicity caused by two varieties of talc nanoparticles 9 on A549 cells and lipid peroxidation inhibitory effect 10 exerted by ascorbic acid" (Akhtar, et al.)</p> <p>11</p> <p>12 36 "Cytotoxicity and Apoptosis Induction by 415 13 Nanoscale Talc Particles from Two Different Geographical 14 Regions in Human Lung Epithelial Cells" (Akhtar, et al.)</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p>

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<p>1 VIDEOGRAPHER:</p> <p>2 We are now on the record. My name is</p> <p>3 Devyn Mulholland. I'm a videographer for Golkow</p> <p>4 Litigation Services. Today's date is March 29th,</p> <p>5 2019. The time is 9:03 a.m.</p> <p>6 This video deposition is being held in</p> <p>7 Birmingham, Alabama, in the matter of Talcum</p> <p>8 Powder Litigation, MDL Number 2738. The deponent</p> <p>9 is Michael Birrer, M.D., Ph.D.</p> <p>10 Counsel will be noted on the</p> <p>11 stenographic record. The court reporter is Lois</p> <p>12 Robinson and will now swear in the witness.</p> <p>13 MICHAEL BIRRER, M.D., PH.D.,</p> <p>14 the witness, after having first been</p> <p>15 duly sworn to tell the truth, the whole truth,</p> <p>16 and nothing but the truth, was examined and</p> <p>17 testified as follows:</p> <p>18 EXAMINATION</p> <p>19 BY MS. THOMPSON:</p> <p>20 Q Dr. Birrer, I'm Margaret Thompson, and</p> <p>21 I'll be taking your deposition today.</p> <p>22 You've had your deposition taken</p> <p>23 before; right?</p> <p>24 A Correct.</p>	<p>1 It -- it eventually went to -- to court. They</p> <p>2 have a panel up there of three judges, which sort</p> <p>3 of prescreens it.</p> <p>4 Q And you've also submitted a previous</p> <p>5 report in this case; correct?</p> <p>6 MS. CURRY:</p> <p>7 Object to the form.</p> <p>8 A Correct.</p> <p>9 MS. THOMPSON:</p> <p>10 Q That was in the Swan case? Does that</p> <p>11 sound familiar?</p> <p>12 A Yes.</p> <p>13 Q Have any of your opinions -- and that</p> <p>14 was in May 2017. Does that sound right?</p> <p>15 A That sounds right.</p> <p>16 Q Have any of your opinions in this case</p> <p>17 changed since May 2017?</p> <p>18 A No.</p> <p>19 Q Have any of your opinions changed since</p> <p>20 you were deposed in September of 2018?</p> <p>21 A No.</p> <p>22 Q I guess that would be a "no" if they</p> <p>23 hadn't changed since 2017.</p> <p>24 A It's consistent.</p>
<p>1 Q Including in the talcum powder</p> <p>2 litigation; correct?</p> <p>3 A Yes.</p> <p>4 Q Have you had your deposition taken in</p> <p>5 any other situation?</p> <p>6 A I gave testimony in a case, but that</p> <p>7 wasn't a deposition, I don't think. No.</p> <p>8 Q And when was that?</p> <p>9 A That was prior to the talc. It's --</p> <p>10 probably goes back, I want to say, 2015, 2012,</p> <p>11 somewhere --</p> <p>12 Q And what -- sorry.</p> <p>13 A Yeah.</p> <p>14 Q What was the nature of that matter?</p> <p>15 A I was in Massachusetts at the time. It</p> <p>16 was a delayed diagnosis case.</p> <p>17 Q A medical malpractice case?</p> <p>18 A Medical malpractice, yes.</p> <p>19 Q Were you testifying for the plaintiff</p> <p>20 or for the defendant?</p> <p>21 A Defendant.</p> <p>22 Q Was it a physician or a doc -- a</p> <p>23 hospital?</p> <p>24 A It was both. And it was in Maine.</p>	<p>1 Q And you're aware that the purpose of</p> <p>2 today is for me to gain a thorough understanding</p> <p>3 of what opinions you plan to give at a hearing or</p> <p>4 trial?</p> <p>5 A Yes.</p> <p>6 Q And the basis for those opinions;</p> <p>7 right?</p> <p>8 A Yes.</p> <p>9 Q And your report states that your</p> <p>10 opinions are given to a reasonable degree of</p> <p>11 scientific and medical certainty.</p> <p>12 Q What does that mean to you?</p> <p>13 A It means that, basically, more often</p> <p>14 than not, they're correct.</p> <p>15 Q And you are a medical doctor as well as</p> <p>16 a Ph.D. researcher; correct?</p> <p>17 A Correct.</p> <p>18 Q Do you currently see patients?</p> <p>19 A I do.</p> <p>20 Q Do you currently diagnose ovarian</p> <p>21 cancer in women?</p> <p>22 A Yes.</p> <p>23 Q How -- do you treat women with ovarian</p> <p>24 cancer?</p>

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1	A Yes.	1 A Yes.
2	Q And would that primarily involve the medical aspects, including chemotherapy administration?	2 Q And does that pretty much cover the types of research that you would be doing in your lab --
3		3 MS. CURRY:
4		4 Object to the form.
5	A Yes.	5 MS. THOMPSON:
6	Q Do you perform any surgical procedures?	6 Q -- or in a general sense?
7	A No.	7 A I'm just trying to think if there was
8	Q What --	8 anything else. We obviously do a lot of
9	A I'm a medical oncologist.	9 review-type papers and articles. You know, I
10	Q What --	10 think that's pretty broad. I think it does,
11	A I could perform it, but it wouldn't	11 actually.
12	come out very well.	12 Q When you do a review article, is that
13	Q I understand.	13 usually invited by the journal, or is that a
14	What percentage of your time involves	14 topic that you have interest in that you submit
15	patient care versus research?	15 as a publication?
16	A So --	16 A Could be both. A lot of them are
17	MS. CURRY:	17 invited. But we have occasionally thought of
18	Object to the form.	18 areas that we thought were interesting and
19	A -- right now I have a half-a-day clinic	19 important and suggested it.
20	a week, and then the research component, I have a	20 Q And are authors or review articles
21	fully funded lab, probably two days a week. I'm	21 generally intended to be experts in the field?
22	the director of the cancer center, which also	22 MS. CURRY:
23	takes a fair amount of administrative	
24	responsibility.	
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1	MS. THOMPSON:	1 Object to the form.
2	Q So administrative time --	2 A More often than not, yes. But
3	A Yeah.	3 frequently on my reviews, I'll have some junior
4	Q -- as well included in that?	4 people.
5	And how would you describe the focus of	5 MS. THOMPSON:
6	your laboratory search -- research currently?	6 Q With -- with a senior author
7	A Almost entirely on ovarian cancer and	7 usually --
8	exploring detailing the genomics, the molecular	8 A (Nods affirmatively.)
9	basis for ovarian cancer and trying to translate	9 Q -- correct?
10	that into better early detection, diagnosis and	10 A Correct.
11	treatment.	11 Q And that would be, I would think,
12	Q Are you doing in vitro as well as in	12 because readers of a journal want to know that
13	vivo research?	13 it's an expert in the field that's providing the
14	A Correct.	14 information in a review article; right?
15	Q And have published in both animal	15 MS. CURRY:
16	studies as well as cellular studies?	16 Object to the form.
17	A Yes.	17 A I think so, yeah.
18	Q Have you published with immortalized	18 MS. THOMPSON:
19	cells?	19 Q Would you agree with me that it would
20	A Yes.	20 be unethical at this point in time to design a
21	Q Have you published research with human	21 prospective study in which women were exposed to
22	tissue?	22 talcum powder in the genital area and follow over
23	A Yes.	23 time?
24	Q Have you published human trials?	24 MS. CURRY:

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<p>1 Object to the form.</p> <p>2 A Prospectively and randomized and --</p> <p>3 could you just --</p> <p>4 MS. THOMPSON:</p> <p>5 Q Let's start with just prospectively.</p> <p>6 A I -- I think it would be a --</p> <p>7 interesting question. I don't think it would be</p> <p>8 valuable.</p> <p>9 Q How about a randomized trial? Would it</p> <p>10 be ethical?</p> <p>11 A No. I don't think it would be valuable</p> <p>12 at all.</p> <p>13 Q But I didn't ask about valuable.</p> <p>14 What about ethical?</p> <p>15 A Well, val- -- if it's not valuable, it</p> <p>16 should -- it wouldn't be of great concern to do</p> <p>17 that. I'm not sure what you're asking.</p> <p>18 Q Well, I'm asking if you -- if you have</p> <p>19 a carcinogen, even a possible carcinogen, you</p> <p>20 could not design and get a trial through IRB</p> <p>21 using that product and a control group; correct?</p> <p>22 MR. MIZGALA:</p> <p>23 Object to form.</p> <p>24 A I guess -- I -- I see what -- now I see</p>	<p>1 A And this is -- this is a -- let me get</p> <p>2 my glasses -- supplemental materials received by</p> <p>3 me after this was done.</p> <p>4 Q Okay.</p> <p>5 A Okay?</p> <p>6 Q And, so, "received by" you meant the</p> <p>7 lawyers for Johnson & Johnson provided those</p> <p>8 supplemental materials to you?</p> <p>9 A It was a little bit of both. I mean,</p> <p>10 some of this I wasn't privy to, so I got it</p> <p>11 provided to me, and some of these were additional</p> <p>12 articles that I was -- I pulled out.</p> <p>13 Q Okay. And I've marked as Exhibit 1</p> <p>14 your expert report.</p> <p>15 (DEPOSITION EXHIBIT NUMBER 1</p> <p>16 WAS MARKED FOR IDENTIFICATION.)</p> <p>17 MS. THOMPSON:</p> <p>18 Q Do you --</p> <p>19 Do you have a copy? You're good on</p> <p>20 that?</p> <p>21 A And mine's -- mine's thicker than</p> <p>22 yours, so -- it's got my CV in there.</p> <p>23 Q I separated out your CV. So -- well,</p> <p>24 good. But that's a good observation.</p>
<p>1 what you're asking.</p> <p>2 So my position on that is that talc</p> <p>3 is -- I don't believe talc is a carcinogen.</p> <p>4 MS. THOMPSON:</p> <p>5 Q I understand. But there are others</p> <p>6 that do.</p> <p>7 And, so, is it your opinion that an IRB</p> <p>8 would let a study through using what has been</p> <p>9 designated as a possible carcinogen, say, for</p> <p>10 example, IARC?</p> <p>11 MS. CURRY:</p> <p>12 Object to the form.</p> <p>13 A I have no idea.</p> <p>14 MS. THOMPSON:</p> <p>15 Q All right. So the ground rules are</p> <p>16 we'll try not to interrupt each other. Let me</p> <p>17 know if I ask a bad question or one that you</p> <p>18 don't understand, and I'll expect you to answer</p> <p>19 honestly. Fair enough?</p> <p>20 A Yes.</p> <p>21 Q If you need a break, let me know.</p> <p>22 What did you bring with you today?</p> <p>23 A I have my expert report right here.</p> <p>24 Q And is that all you brought with you?</p>	<p>1 And -- and I marked as Exhibit 2 your</p> <p>2 CV.</p> <p>3 A Okay.</p> <p>4 (DEPOSITION EXHIBIT NUMBER 2</p> <p>5 WAS MARKED FOR IDENTIFICATION.)</p> <p>6 MS. THOMPSON:</p> <p>7 Q And that should --</p> <p>8 And you're good on that, too?</p> <p>9 MS. CURRY:</p> <p>10 Thank you.</p> <p>11 MS. THOMPSON:</p> <p>12 Q That should -- those combined should be</p> <p>13 the same thickness of what you've brought.</p> <p>14 And I also brought the Notice of</p> <p>15 Deposition, which I'm going to hand you.</p> <p>16 (DEPOSITION EXHIBIT NUMBER 3</p> <p>17 WAS MARKED FOR IDENTIFICATION.)</p> <p>18 MS. THOMPSON:</p> <p>19 Q And this is the one with objections.</p> <p>20 Have you seen this before, Dr. Birrer?</p> <p>21 A Yes.</p> <p>22 Q And did you look at the request on</p> <p>23 the -- on this document?</p> <p>24 A Yes.</p>

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<p>1 Q Is there -- and there's nothing that 2 was responsive to any of these requests? 3 MS. CURRY: 4 Objection. Subject to the objections 5 that were made by counsel. 6 MS. THOMPSON: 7 Q Subject -- 8 MS. THOMPSON: 9 Sorry. 10 Q Subject to the objections. 11 A Yeah. 12 Q So where would you keep your file for 13 the litigation? 14 MS. CURRY: 15 And I'm sorry. Just to clarify for the 16 record, there is a small production at the back 17 that incorporates the -- 18 MS. THOMPSON: 19 Yes. 20 MS. CURRY: 21 -- invoice as well as the supplemental 22 fee schedule and the supplemental list of 23 materials. 24 MS. THOMPSON:</p>	<p>1 Q -- this litigation? 2 And be careful not to interrupt just 3 because it makes our court reporter's job a 4 little more difficult. 5 How much money have you been paid total 6 by Johnson & Johnson in talcum powder litigation? 7 A To date, nothing. 8 Q You haven't been paid for any of the 9 other cases that you've testified in? 10 A Correct. 11 Q Why is that? 12 A I'm a lousy businessman. I haven't 13 invoiced for Swan yet and I haven't invoiced for 14 Brower. But I can -- I can estimate the hours. 15 Q Go ahead and estimate. 16 A Swan I think is around 80 hours -- 17 Q Okay. 18 A -- because it was the initial case. It 19 was a bundled -- bundled five cases, so involved 20 a lot of review. And the deposition alone was 21 quite long. I remember like it was yesterday. 22 And, then, Brower was probably about 40 23 hours. 24 Q Okay.</p>
<p>1 Right. 2 Q So the supplemental material list that 3 you brought with you today, Dr. Birrer, is 4 attached to the back of this notice with 5 objections; correct? 6 A That's the same as this. Yes. 7 Q Yes. 8 A Yeah. Uh-huh. 9 Q And also attached to this -- this 10 notice with objections are your fees; correct? 11 A Correct. 12 Q And are -- are those all the invoices 13 that you have submitted thus far? 14 A Yes. 15 Q And how much -- and from -- this 16 invoice that's attached to Exhibit 3 goes through 17 March 17th. 18 How much time would you say you have 19 spent since March 17th preparing for the case? 20 A I'd say probably put another 15 hours, 21 And I haven't invoiced that yet. 22 Q Okay. And you have testified in other 23 cases for the defendants in -- 24 A Correct.</p>	<p>1 A And those invoices are being 2 constructed. 3 Q And you're charging those at the same 4 rate as in your fee schedule -- 5 A That's right. 6 Q -- attached to this document? 7 A That's right. 8 Q Okay. When were you first approached 9 by Johnson & Johnson as -- about serving as an 10 expert in talcum powder litigation? 11 A So that was before the -- that was the 12 Blaes or Swan case. I believe it was in 13 December, around November, December of 2016. 14 Q '16? 15 A Thank you. Time flies. 16 Q Only because I know that the report was 17 submitted in May, so -- 18 A (Nods affirmatively.) 19 Q -- I'm assuming that you didn't work 18 20 months on that -- 21 A No. 22 Q -- case. 23 And you were asked in -- for this 24 report that you just submitted, to address the</p>

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<p>1 biological plausibility of the plaintiffs' theory 2 that cosmetic talcum powder can cause ovarian 3 cancer. Right? 4 A Correct. 5 Q And that would be the stand- -- from 6 the standpoint of the genomics and molecular 7 biology that is your expertise; correct? 8 MS. CURRY: 9 Object to the form. 10 A So I think they were asking me in the 11 big picture the biologic plausibility of talc 12 being involved in the -- causing ovarian cancer 13 and then my scientific experience, even clinical 14 experience, would factor into -- to -- to that 15 expert opinion. 16 MS. THOMPSON: 17 Q Was that a different opinion than what 18 you were asked to provide in the previous cases 19 that you testified in? 20 MS. CURRY: 21 Object to the form. 22 A Previously -- the answer, I believe, is 23 no. But I was asked for general causation 24 before. This was a more -- somewhat more narrow</p>	<p>1 with an increased risk of epithelial ovarian 2 cancer? 3 A Correct. 4 Q Is it your opinion that the genital use 5 of talcum powder is not a risk factor for 6 epithelial ovarian cancer? 7 A Correct. 8 Q Is it your opinion that genital use of 9 talcum powder products does not cause ovarian 10 cancer? 11 A Correct. 12 Q Is it your opinion that the genital use 13 of talcum powder products does not cause ovarian 14 cancer in some women? 15 MS. CURRY: 16 Object to the form. 17 A Correct. 18 MS. THOMPSON: 19 Q And that would be ever. 20 MS. CURRY: 21 Object -- object to the form. 22 A No data to support that. 23 MS. THOMPSON: 24 Q Is it your opinion that the genital use</p>
<p>1 expert opinion. 2 MS. THOMPSON: 3 Q So in this case, you're not providing 4 general causation opinions. You're providing the 5 biological mechanism, plausibility opinions; 6 correct? 7 A Well, the title -- 8 MS. CURRY: 9 Object to the form. 10 A The title on the expert report is for 11 General Causation For the Daubert Hearing. But 12 my understanding was -- was to focus extensively, 13 if you will, on the biologic plausibility. 14 MS. THOMPSON: 15 Q And because biological plausibility is 16 part of general causation; correct? 17 A Correct. 18 Q But it's not the whole of general 19 causation. Is that your understanding? 20 A Correct. 21 Q So I want to make sure that I 22 understand your opinions. 23 Is it your opinion that the perineal 24 use of talcum powder products is not associated</p>	<p>1 of talcum powder does not contribute to the 2 development of epithelial ovarian cancer? 3 A Yes. 4 Q And do you say that there's no data to 5 support that as well? 6 A Correct. 7 Q Is it your opinion that genital use of 8 talcum powder does not contribute to the 9 development of ovarian cancer in some women? 10 MS. CURRY: 11 Object to the form. 12 A There's no data to support that either. 13 MS. THOMPSON: 14 Q So the answer is yes? 15 A Yes. 16 Q Is it your opinion that any proposed 17 biologic mechanism for how the genital use of 18 talcum powder products could cause epithelial 19 ovarian cancer is not plausible? 20 MS. CURRY: 21 Object to the form. 22 A I would agree with that statement. 23 It's not biologically plausible. 24 MS. THOMPSON:</p>

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<p>1 Q Is it your opinion that any proposed 2 biologic mechanism for how the genital use of 3 talcum powder products might contribute to the 4 development of ovarian cancer is not plausible? 5 MS. CURRY: 6 Object to the form. 7 A There's no data for that either. 8 MS. THOMPSON: 9 Q So the answer would be yes? 10 A Yes. 11 Q Do you intend to give opinions on 12 whether talc particles can reach the ovaries? 13 A I believe on my expert report and in -- 14 and I'm more than happy to talk about it -- 15 reviews the migration theories. 16 Q Do you consider yourself to be an 17 expert in that area? 18 A I think that those studies are 19 relatively straightforward and, based upon my 20 experience that, I would be relatively easy to 21 interpret those. 22 Q Do you feel like you would be in a 23 better position than a gynecologist or 24 gynecologic oncologist?</p>	<p>1 Object to the form. 2 A Correct. 3 MS. THOMPSON: 4 Q Are all the opinions contained in your 5 report that you will be providing in this case? 6 A That's a tough question to ask because 7 I don't know what you're gonna ask me. 8 Q Fair enough. 9 Can you think of any areas, sitting 10 here today, that you intend to testify in other 11 than the migration and transport of particles and 12 the molecular and genomics of cellular tissue 13 response to talc? 14 MS. CURRY: 15 Object to the form. 16 A Well, that's the bulk of my expert 17 report. I'm -- again, it depends on what you ask 18 me within the construct of general causation. 19 I'm willing to talk about some of that. 20 MS. THOMPSON: 21 Q Okay. I understand. 22 A Uh-huh. 23 Q And you are not an epidemiologist; 24 correct?</p>
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<p>1 A Yes. 2 Q Have you found any new expertise in the 3 migration or transport of particles in the female 4 reproductive system since 2017? 5 MS. CURRY: 6 Object to the form. 7 A I'm not sure what you mean by "found 8 any new expertise." In the literature or my own 9 experience? 10 MS. THOMPSON: 11 Q Do you believe that you have more 12 expertise in that subject than you did in 2017? 13 A I think that it's comparable. 14 Q So that would be no additional 15 expertise since 2017, when you testified 16 previously? 17 MS. CURRY: 18 Object to the form. 19 A Not that I can identify as -- as we're 20 discussing this. 21 MS. THOMPSON: 22 Q And same for 2018, when you gave a 23 deposition in -- in a talcum powder case? 24 MS. CURRY:</p>	<p>1 A I don't have a degree in epidemiology. 2 But I have training. 3 Q So would you agree that your 4 understanding of epidemiology is general in 5 nature? 6 MS. CURRY: 7 Object to the form. 8 A So in order to be a, you know, 9 laboratory-based scientist in this field and a 10 clinician to treat patients, you certainly need 11 to have an understanding of epidemiologic 12 studies, so I have that understanding. And I 13 think that it gives me the ability to assess 14 epidemiologic studies and to draw conclusions 15 from them. 16 MS. THOMPSON: 17 Q But if you're looking for more nuanced 18 or more comprehensive epidemiological experience, 19 you would look to an actual epidemiologist; 20 correct? 21 MS. CURRY: 22 Object to the form. 23 A Well, I think it would depend on the 24 question that's being asked.</p>

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<p>1 MS. THOMPSON:</p> <p>2 Q Well, for example, in the consortium</p> <p>3 that you publish with, there are specific</p> <p>4 epidemiologists that publish with the group;</p> <p>5 correct?</p> <p>6 A Which consortium are you referring to?</p> <p>7 Q There are several?</p> <p>8 A Yes.</p> <p>9 Q Take -- take the Ovarian Cancer</p> <p>10 Association Consortium.</p> <p>11 A The GOS?</p> <p>12 Q No. OCAC or --</p> <p>13 A Okay.</p> <p>14 Q There are specific epidemiologists that</p> <p>15 I assume are recruited to -- to provide the</p> <p>16 epidemiology experience in that consortium;</p> <p>17 correct?</p> <p>18 A There are epidemiologists in that</p> <p>19 consortium. I will point out there are lots of</p> <p>20 other people and scientists.</p> <p>21 Q And -- and -- and you would be sought</p> <p>22 out for that type of consortium because of your</p> <p>23 molecular experience; correct?</p> <p>24 MS. CURRY:</p>	<p>1 comments, and they're all listed in terms of</p> <p>2 biologic plausibility. And then, of course, I</p> <p>3 spent a lot of time on Dr. Saed.</p> <p>4 MS. THOMPSON:</p> <p>5 Q My question, though, is which of the</p> <p>6 plaintiff experts were you asked to offer</p> <p>7 criticism of?</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A So I reviewed the entire list, and</p> <p>11 that's listed in the materials. I think it's on</p> <p>12 page --</p> <p>13 MS. THOMPSON:</p> <p>14 Q 28?</p> <p>15 A -- 28 and 29.</p> <p>16 Q Okay. Let's go ahead and go -- do --</p> <p>17 did you read all of these experts -- expert</p> <p>18 reports?</p> <p>19 A I looked through them, yes.</p> <p>20 Q And each one?</p> <p>21 A Correct.</p> <p>22 Q All right. Let's go through each one</p> <p>23 and have you tell me what you gleaned from each</p> <p>24 expert report.</p>
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<p>1 Object to the form.</p> <p>2 A Well, I would add to that that I think</p> <p>3 from a -- sort of a clinical standpoint we</p> <p>4 provide some reality testing in terms of</p> <p>5 whether -- what they're observing is actually</p> <p>6 meaningful.</p> <p>7 MS. THOMPSON:</p> <p>8 Q Yes. So it would be for your</p> <p>9 experience as a clinician in genomics and</p> <p>10 molecular researcher; right?</p> <p>11 A Yes.</p> <p>12 Q That makes sense.</p> <p>13 You're not a gynecologist or</p> <p>14 gynecologic oncologist; correct?</p> <p>15 A Correct.</p> <p>16 Q Were you asked to offer criticism of</p> <p>17 plaintiff experts and their opinions?</p> <p>18 MS. CURRY:</p> <p>19 Object to the form.</p> <p>20 A So in my expert report, I really</p> <p>21 reviewed the primary literature, and with -- with</p> <p>22 then integrating that into the arguments made by</p> <p>23 plaintiffs' expert witnesses. So you see in a</p> <p>24 section there I began to look at individuals'</p>	<p>1 MS. CURRY:</p> <p>2 Object to the form.</p> <p>3 MS. THOMPSON:</p> <p>4 Q Ann McTiernan, do you know Ann</p> <p>5 McTiernan?</p> <p>6 A I don't know her personally.</p> <p>7 Q What's her field of expertise?</p> <p>8 A I would have to check that.</p> <p>9 Q So you don't remember here today</p> <p>10 what --</p> <p>11 A Well, you're reviewing, I think --</p> <p>12 let's be honest, 300 pages. I'm not going to be</p> <p>13 able to go through those systematically.</p> <p>14 Q Well --</p> <p>15 A But if you look at my report, it very</p> <p>16 specifically addressed some of the flaws in the</p> <p>17 experts' opinions regarding migration of talc.</p> <p>18 Q I -- I understand. But my question is</p> <p>19 do you know what Dr. McTiernan's area of</p> <p>20 expertise is? And it's fine if you don't.</p> <p>21 A I'd have to look it up.</p> <p>22 Q Okay. Do you know Dr. Carson's area of</p> <p>23 expertise?</p> <p>24 A I have never met him, and I don't know</p>

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<p>1 him.</p> <p>2 Q Have you met Dr. McTiernan?</p> <p>3 A No.</p> <p>4 Q What is Dr. Clarke-Pearson's area of expertise?</p> <p>5 A Clarke-Pearson is a gynecological oncologist, former department chair at UNC. Now he's stepped down.</p> <p>6 Q And do you know Dr. Clarke-Pearson?</p> <p>7 A I've met him.</p> <p>8 Q And what about Dr. Kessler?</p> <p>9 A I've never met Dr. Kessler.</p> <p>10 Q What's his area of expertise?</p> <p>11 A I can't quote you that.</p> <p>12 Q What's Dr. Smith's area of expertise?</p> <p>13 A I think Dr. Smith's pretty -- actually, I can't tell you.</p> <p>14 Q And Dr. Saed, I think we know.</p> <p>15 Q What about Dr. Siemiatycki?</p> <p>16 A Uh-uh. No.</p> <p>17 Q Dr. Wolf?</p> <p>18 A I've met Judith. She's a gynecologic oncologist.</p> <p>19 Q And do you know Dr. Zelikoff's area of</p>	<p>1 experiments?</p> <p>2 A No. Laboratory-based?</p> <p>3 Q Laboratory, yes.</p> <p>4 A No.</p> <p>5 Q What did you know about talcum powder and a possible link to ovarian cancer before you were approached to serve as an expert in 2017?</p> <p>6 A So it was not something that we dealt with clinically. We never counseled patients.</p> <p>7 Scientifically, it never really was part of my laboratory effort. I didn't know really -- I didn't know anybody working with it in the lab.</p> <p>8 And -- and, you know, to be fair, I would say that I was aware of the sort of concept that some people -- some epidemiologic studies were being done trying to determine relationship of talc exposure to ovarian cancer. And that's about it.</p> <p>9 Q Were you -- were you aware of the issues raised by Dr. Woodruff and others in the '70s about possible contamination with asbestos?</p> <p>10 MS. CURRY:</p> <p>11 Object to the form.</p> <p>12 A No.</p> <p>13 MS. THOMPSON:</p>
<p>1 expertise?</p> <p>2 A I don't know her.</p> <p>3 Q Nor her area of expertise?</p> <p>4 A Correct.</p> <p>5 Q What about Dr. Plunkett? Do you know her area of expertise?</p> <p>6 A I don't.</p> <p>7 Q Dr. Moorman, do you know her area of expertise?</p> <p>8 A Don't know her. No.</p> <p>9 Q Dr. Smith-Bindman, do you know her area of expertise?</p> <p>10 A No.</p> <p>11 Q Do you know the area of expertise of Dr. Kane?</p> <p>12 A Nope.</p> <p>13 Q Dr. Levy?</p> <p>14 A No.</p> <p>15 Q Dr. Singh?</p> <p>16 A No.</p> <p>17 Q Were you asked by Johnson & Johnson to perform any experiments?</p> <p>18 A No.</p> <p>19 Q Did you offer to perform any</p>	<p>1 Q Did you have any opinions about whether talcum powder could cause ovarian cancer before you were approached to serve as an expert?</p> <p>2 A Well, my sense was that it wasn't a factor.</p> <p>3 Q And what was --</p> <p>4 A Because we -- again, we weren't -- we weren't using it in the clinic. We weren't talking about it. There were essentially no presentations in the biologic plausibility within any of the scientific meetings that I would go to.</p> <p>5 Q And at that time, that's what your impression, at least, would have been based on?</p> <p>6 MS. CURRY:</p> <p>7 Object to the form.</p> <p>8 A Yeah.</p> <p>9 MS. THOMPSON:</p> <p>10 Q Did you write your report?</p> <p>11 A Yes.</p> <p>12 Q Every word?</p> <p>13 A Yes.</p> <p>14 Q Did you choose the literature to cite?</p> <p>15 A So I pulled out most of that myself,</p>

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<p>1 went back and did a reference list and then 2 pulled more. As I said before, the expert 3 reports would have been provided from counsel. 4 There may have been some papers that I 5 said, hey, I don't have this. Can you pull this 6 out? And then they would -- they would provide 7 it to me. 8 Q And there are -- just so I understand 9 the literature -- 10 A Uh-huh. 11 Q -- there's literature that you actually 12 cite in the report in footnotes; right? 13 A Correct. 14 Q And then there's another list at the 15 end of the report that's considered -- that's 16 titled "Materials Reviewed and Considered by Dr. 17 Birrer"; right? 18 A That's right. 19 Q And can I assume that the literature 20 that are actually cited in the footnotes is 21 literature that you felt was particularly 22 significant? 23 MS. CURRY: 24 Object to the form.</p>	<p>1 of information, I did that by searching. 2 MS. THOMPSON: 3 Q And what search engines did you use? 4 A It was mostly PubMed, which is 5 something we use all the time. 6 Q And did you -- what search terms did 7 you use? 8 A Ovary, ovarian cancer, talc. So the 9 ones you -- you'd predict. And that doesn't 10 necessarily generate the entire list. Right? I 11 mean, you get the list and then you look at the 12 papers, go back to the references in those 13 papers, and then you see if you -- you're missing 14 out. Then you pull out more. And as you go 15 through this iteration, you begin to find out 16 that you're identifying the same patient -- the 17 same papers. So then you begin to get an idea 18 that you have the sum total of what you need. 19 Q And have you saved those papers 20 anywhere? 21 A So those were -- the way that worked 22 was they came in, mostly computer-based, and then 23 I would look at those, extract what I wanted, and 24 then construct the report. And that was all done</p>
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<p>1 A Yeah. So the idea here was to try to 2 provide some guidance as to where that reference 3 was relevant within the document. That's why 4 it's on each page. At the end is a sort of sum 5 total. 6 MS. THOMPSON: 7 Q Okay. 8 A Yeah. 9 Q Did you choose any quotes that are 10 included in your expert report yourself? 11 MS. CURRY: 12 Object to the form. 13 MS. THOMPSON: 14 Q It was a bad question. 15 Did you choose the quotes that are 16 included in your expert report? 17 A Correct. 18 Q Did you choose the language that you 19 used to criticize the plaintiffs' experts? 20 A Correct. 21 Q Did you perform any searches? 22 MS. CURRY: 23 Object to the form. 24 A In order to generate the original body</p>	<p>1 in the computer. 2 Q But what happened to the articles? 3 MS. CURRY: 4 Object to the form. 5 A Well, they'd be computer-based, or 6 there's backup, I believe, some backup copies 7 here on everything. 8 MS. THOMPSON: 9 Q So -- so everything that you looked at 10 would be in your materials considered list and 11 the supplemental materials considered list? 12 A Correct. Yep. 13 Q Did you look at plaintiff expert 14 depositions? 15 A Correct. 16 Q Which ones? 17 A So I looked at the deposition of 18 Dr. Saenz. I think that's listed on supplemental 19 deposition. 20 MS. CURRY: 21 I believe she asked about plaintiff 22 expert deposition. 23 MS. THOMPSON: 24 Q Plaintiff.</p>

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<p>1 A I'm sorry. I'm on the wrong one. So 2 that would be Dr. Saed.</p> <p>3 Q Uh-huh.</p> <p>4 A And I think -- let's go back and look. 5 I think -- yeah. It was 23 and 24 are -- were 6 both the Saed depositions. I think that's it.</p> <p>7 Q In the file -- the backup file that you 8 mentioned that's here, is that on a thumb drive 9 or what's --</p> <p>10 MS. CURRY: 11 Object to the form. They're actually 12 my -- the lawyer's files. I just brought a copy 13 of the references in case we needed to refer to 14 everything. But it's not -- actually not 15 Dr. Birrer's file.</p> <p>16 MS. THOMPSON: 17 Q So there's no electronic file that you 18 possess? 19 A Yeah. 20 Q Did you make any notes or highlights on 21 any of the articles that -- 22 A (Shakes head negatively.) 23 Q And in addition to Dr. Saed's 24 deposition, you have listed two drafts of his</p>	<p>1 MS. CURRY: 2 Here you go. 3 A This supplemental list with objections 4 or the extra paper? 5 MS. THOMPSON: 6 Q And you reviewed some reports from 7 governmental and regulatory agencies; correct? 8 A Correct. 9 Q I'll go ahead and mark those. We're 10 gonna discuss them more later. 11 (DEPOSITION EXHIBIT NUMBER 4 12 WAS MARKED FOR IDENTIFICATION.) 13 MS. THOMPSON: 14 Q You've looked at the Health Canada's 15 recent draft assessment; correct? 16 A Yes. 17 Q When did you first see that? 18 A It was in a deposition of Dr. Saenz's. 19 Q And do you know when that was first 20 published? 21 A The Health Canada? 22 Q Yes. 23 A Fairly recently. Can't quote you the 24 date.</p>
<p>1 manuscript that was recently published; correct? 2 A I believe I saw the pre-print and then 3 the copy of the actual published paper. And, of 4 course, his expert report. 5 Q When did you first see Dr. Saed's 6 manuscript? 7 MS. CURRY: 8 Object to the form. 9 A Preprint or published? 10 MS. THOMPSON: 11 Q Either. 12 A So I think the preprint came first, 13 obviously. The expert report was available 14 first, and then the preprint, and then just 15 within, I think, a month and a half I got the 16 paper. It was pretty recent. 17 Q Is Dr. Saenz's published manuscript on 18 your supplemental materials list? 19 MS. CURRY: 20 It's attached to the objections, which 21 is Exhibit 3. 22 MS. THOMPSON: 23 Yeah. I -- I couldn't find my notice 24 with objections.</p>	<p>1 Q If it was December, would that surprise 2 you? 3 MS. CURRY: 4 Object to the form. 5 A December of -- 6 MS. THOMPSON: 7 Q Of '18? 8 A That's pretty recent. 9 Q Were you not aware that this had been 10 put online by Health Canada prior to Dr. Saenz's 11 deposition? 12 A I was not. 13 Q Did you review that 2014 letter from 14 FDA in response to a public citizen complaint? 15 A I am familiar with that. 16 (DEPOSITION EXHIBIT NUMBER 5 17 WAS MARKED FOR IDENTIFICATION.) 18 MS. THOMPSON: 19 Q And I'll mark that 2014 public citizen 20 response letter from the FDA as Exhibit Number 5. 21 Does that look like the letter that you 22 reviewed, Dr. Birrer? 23 A (Nods affirmatively.) I've seen that, 24 yeah.</p>

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<p>1 Q And did you review the IARC Monograph 2 on Nonasbestiform Talc from 2010? 3 A I did. 4 Q And that will be Exhibit Number 6. 5 (DEPOSITION EXHIBIT NUMBER 6 6 WAS MARKED IDENTIFICATION.) 7 MS. THOMPSON: 8 Q Does that look like the document that 9 you reviewed? 10 A Yes. Yeah. I've seen that. Yep. 11 MS. THOMPSON: 12 Dawn, if you want more copies, I'm 13 happy to give -- 14 MS. CURRY: 15 I'm okay. I don't know if other 16 counsel need a copy to review. 17 MR. MIZGALA: 18 No. 19 MS. THOMPSON: 20 I think for most everything I have 21 another copy, so if there's anything you'd like 22 to see and not have to take home with you, I'm 23 happy to provide it. 24 MS. THOMPSON:</p>	<p>1 Q Okay. That's my question. 2 A Yes. 3 Q But it was published in December, and 4 you didn't look at it until you saw it in 5 Dr. Saenz's deposition as an exhibit; right? 6 A Correct. 7 Q Did you deem it important? 8 MS. CURRY: 9 Object to the form. 10 A Well, since it was quoted and my 11 impression was that there were people who thought 12 this was important, that necessitated me to take 13 a look at it. 14 MS. THOMPSON: 15 Q Did you think it was important? 16 MS. CURRY: 17 Object to the form. 18 A Well, after I read it, again, my sense 19 was it doesn't really sway me one more -- one way 20 or the other because they're -- they're 21 essentially re-reviewing all the data that we 22 know and coming to a different conclusion. I 23 just think they got it wrong, unfortunately. 24 MS. THOMPSON:</p>
<p>1 Q Did you know that the Health Canada 2 assessment was made pub- -- made available to the 3 public? 4 A Yes. 5 MS. CURRY: 6 Object to the form. 7 MS. THOMPSON: 8 Q Do you believe that the Health Canada 9 risk assessment is relevant to the topic today? 10 MS. CURRY: 11 Object to the form. 12 A It doesn't change my opinion about 13 biologic plausibility. It's a -- obviously, an 14 opinion that's based upon a lot of data that I 15 believe is reviewed by Taher, which is 16 information data that I already was aware of, so 17 it doesn't really sway me one way or the other. 18 MS. THOMPSON: 19 Q But my question was, did you deem it 20 relevant? 21 MS. CURRY: 22 Object to the form. 23 A Relevant to review. 24 MS. THOMPSON:</p>	<p>1 Q But you will agree that it did provide 2 an extensive review on the subject? 3 MS. CURRY: 4 Object to the form. 5 A It was, I thought, would be described 6 as extensive. 7 MS. THOMPSON: 8 Q Did you review the statement of the 9 methodology that accompanied the risk assessment? 10 A I went -- I looked through it. 11 Q I'll mark that as Exhibit 7. 12 (DEPOSITION EXHIBIT NUMBER 7 13 WAS MARKED IDENTIFICATION.) 14 MS. THOMPSON: 15 Q Is that what you saw? 16 A I didn't see it printed like this with 17 the color on it. Yeah. 18 Q And let's just look at page 2 of the 19 document titled "Weight of Evidence, General 20 Principles and Current Applications in Health 21 Canada." 22 Does number 3, Role in Risk 23 Assessments, generally outline the methodology that Health Canada applied to this risk</p>

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<p>1 assessment?</p> <p>2 MS. CURRY:</p> <p>3 Object to the form.</p> <p>4 A Yeah. I think it's a summary of</p> <p>5 what -- of how they approached it. That's my</p> <p>6 sense. Yep.</p> <p>7 MS. THOMPSON:</p> <p>8 Q And for the risk assessment, Health</p> <p>9 Canada assumed talc or talcum products to be</p> <p>10 nonasbestiform.</p> <p>11 Is that your understanding?</p> <p>12 A Yeah. I believe that's what they</p> <p>13 focused on.</p> <p>14 Q What does nonasbestiform mean?</p> <p>15 A I'm not going to go down the line of</p> <p>16 being an expert in asbestos.</p> <p>17 Q So do you not know what it means when</p> <p>18 the talc is considered nonasbestiform?</p> <p>19 MS. CURRY:</p> <p>20 Object to the form.</p> <p>21 A I'm assuming they're addressing sort of</p> <p>22 mineral characterization of these substances.</p> <p>23 But again, I -- that's not my area of expertise.</p> <p>24 I'm not a geologist and it -- it in many ways is</p>	<p>1 MS. THOMPSON:</p> <p>2 Q So you're agreeing it's irrelevant what</p> <p>3 form the particles are in when --</p> <p>4 A I'm saying we don't have any data.</p> <p>5 MS. CURRY:</p> <p>6 Object to the form.</p> <p>7 You have to let her get her --</p> <p>8 THE WITNESS:</p> <p>9 Okay.</p> <p>10 MS. CURRY:</p> <p>11 -- entire question out before you</p> <p>12 answer so that the court reporter can get</p> <p>13 everything down.</p> <p>14 MS. THOMPSON:</p> <p>15 Q No data isn't the same as irrelevant,</p> <p>16 and that's my question.</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 A You know, again, I don't think I can</p> <p>20 answer that "yes" or "no."</p> <p>21 MS. THOMPSON:</p> <p>22 Q Is it important whether the substance</p> <p>23 in Johnson's baby powder and Shower to Shower is</p> <p>24 in a particulate form or in a fiber form?</p>
<p style="text-align: center;">Page 55</p> <p>1 sort of irrelevant to looking at many of the</p> <p>2 studies which are just looking at talcum powder.</p> <p>3 MS. THOMPSON:</p> <p>4 Q Does it not matter to you whether that</p> <p>5 talc is in a particle or fiber -- fiber form?</p> <p>6 MS. CURRY:</p> <p>7 Object to the form.</p> <p>8 A Well, I looked at, again, extensively</p> <p>9 all the data that was addressing whether talcum</p> <p>10 powder is a risk factor or plays a role in</p> <p>11 developing ovarian cancer. It is irrelevant in</p> <p>12 that setting whether there are components in</p> <p>13 there that go from asbestiform to heavy metals to</p> <p>14 fragrance. That data would be clear from those</p> <p>15 experiments, and they're not.</p> <p>16 MS. THOMPSON:</p> <p>17 Q So is the answer that -- is it</p> <p>18 irrelevant whether the particles are in a</p> <p>19 particulate form or in a fiber form?</p> <p>20 MS. CURRY:</p> <p>21 Object to the form.</p> <p>22 A Again, I -- that -- that experiment has</p> <p>23 not been done in the -- the -- in the -- in the</p> <p>24 data that I looked at.</p>	<p style="text-align: center;">Page 57</p> <p>1 MS. CURRY:</p> <p>2 Object to the form.</p> <p>3 A I don't know.</p> <p>4 MS. THOMPSON:</p> <p>5 Q You don't know if it's important?</p> <p>6 A I don't know if it's important.</p> <p>7 Q Okay. And is part of the reason is</p> <p>8 because you're not an expert in asbestos?</p> <p>9 MS. CURRY:</p> <p>10 Object to the form.</p> <p>11 A Again, I wasn't asked to evaluate the</p> <p>12 role of asbestos in ovarian cancer. I have an</p> <p>13 opinion on that based upon some of the</p> <p>14 epidemiologic studies.</p> <p>15 But in terms of the compositional</p> <p>16 analysis of talcum powder, that is not within the</p> <p>17 area of my expertise, and the various forms of</p> <p>18 asbestos in talc in terms of mineralogy is not</p> <p>19 something that I've spent time on.</p> <p>20 But, as I pointed out before, the</p> <p>21 experiments that have been conducted address that</p> <p>22 issue, which is they're using talcum powder. If</p> <p>23 it's got a variety of substances in it, any one</p> <p>24 of which match and play a role in ovarian cancer,</p>

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	<p>1 it would have been obvious from the data and it's 2 not.</p> <p>3 MS. THOMPSON:</p> <p>4 Q Is it your opinion that baby powder and 5 Shower to Shower -- and you understand those are 6 the two products that we're here to talk about 7 today; right?</p> <p>8 A Yes. J & J products?</p> <p>9 Q Yes.</p> <p>10 Is it your opinion that those products 11 have been proven safe?</p> <p>12 MS. CURRY:</p> <p>13 Object to the form.</p> <p>14 A So there's no data that I know of that 15 says they're not safe.</p> <p>16 MS. THOMPSON:</p> <p>17 Q That's different. Have they been 18 proven safe?</p> <p>19 MS. CURRY:</p> <p>20 Object to the form.</p> <p>21 A Yes.</p> <p>22 MS. THOMPSON:</p> <p>23 Q And what data do you have as the basis 24 for that, that they have been proven safe?</p>	<p>1 has it been proven unsafe, so --</p> <p>2 MR. MIZGALA:</p> <p>3 Object to the form.</p> <p>4 MS. THOMPSON:</p> <p>5 Q -- I'll ask the question again.</p> <p>6 Have these products been proven safe in 7 your mind?</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A Again, it is -- it is an issue about 11 trying to prove a negative. The data is there 12 are decades of use of this, this material, 13 perineal dusting, with no evidence, no convincing 14 evidence that it's unsafe. I conclude that it's 15 a safe product.</p> <p>16 MS. THOMPSON:</p> <p>17 Q Do you believe that the molecular data 18 proves the product safe?</p> <p>19 MS. CURRY:</p> <p>20 Object to the form.</p> <p>21 A Can you define "molecular data"?</p> <p>22 MS. THOMPSON:</p> <p>23 Q The -- the studies that have been 24 performed on talcum powder, do you believe they</p>
	<p>Page 59</p> <p>1 A Again, years and years of usage with 2 these experiments and biologic systems, 3 epidemiologic data is basically not exposing or 4 uncovering any definitive data that that they're 5 unsafe.</p> <p>6 Q So you believe the epidemiological data 7 proves the product safe?</p> <p>8 A I don't think it -- it proves that it's 9 a risk factor.</p> <p>10 Q Is that --</p> <p>11 A You're asking -- you're asking me to 12 prove a negative. I can't do that.</p> <p>13 Q So you're not -- you're unable to prove 14 that it's safe because you can't prove a 15 negative?</p> <p>16 MS. CURRY:</p> <p>17 Object to the form.</p> <p>18 MS. THOMPSON:</p> <p>19 Q Is that what you're saying?</p> <p>20 A I get -- yeah. I think -- I think the 21 issue in front of us is: Is it unsafe? And the 22 answer to that is there's no data for it.</p> <p>23 Q Well, the issue is what I asked you. 24 And my question was has it been proven safe, not</p>	<p>Page 61</p> <p>1 prove that the products are safe?</p> <p>2 MS. CURRY:</p> <p>3 Object to the form.</p> <p>4 A Just repeat that once more, please.</p> <p>5 MS. THOMPSON:</p> <p>6 Q The molecular studies that have been 7 done on talcum powder, is it your opinion that 8 they prove that the products are safe?</p> <p>9 MS. CURRY:</p> <p>10 Object to the form.</p> <p>11 A So I refine that a bit because I don't 12 really consider them molecular studies. They're 13 biologic studies, and there's a difference.</p> <p>14 The biologic studies which I reviewed, 15 which I think is the sum total that's out there, 16 are completely unconvincing, unconvincing that 17 talcum powder is a -- plays a role in the 18 development of ovarian cancer.</p> <p>19 MS. THOMPSON:</p> <p>20 Q But my question was is it your belief 21 that the biologic studies confirm that the 22 product is safe?</p> <p>23 MS. CURRY:</p> <p>24 Object to the form.</p>

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<p>1 A Again, we're back sort of to that 2 negative. I -- I think if -- I don't think they 3 convince me at all that it's -- it's a risk or 4 that it has any biologic activity on the target 5 organ, which is the ovary. And then in the 6 context of decades of use, then I would conclude 7 that it's a safe product.</p> <p>8 MS. THOMPSON:</p> <p>9 Q And it's fine to say you can't 10 answer -- you can't answer the question. But I 11 need -- but I want to have an answer.</p> <p>12 And that is: Is it your opinion that 13 the biologic studies show that the products are 14 safe?</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A Yeah. I -- I think -- I think 18 certainly that -- I think we can say that the 19 biologic studies do not reveal any untoward 20 effects. It's not reliable. The experiments are 21 not reliable. And so in that context, it's a 22 safe product.</p> <p>23 I mean, again, you're asking me for a 24 biologic experiment that proves something is</p>	<p>1 reviewing the assessment?</p> <p>2 A I believe so, but let me just --</p> <p>3 MS. CURRY:</p> <p>4 Do you have the marked Exhibit 4 there?</p> <p>5 I don't think the witness actually has 6 the --</p> <p>7 Oh, I think it's in front of you here.</p> <p>8 I'm just gonna grab these marked 9 exhibits for him. Thank you.</p> <p>10 MS. THOMPSON:</p> <p>11 I think this is the marked exhibit, 12 unless I --</p> <p>13 MS. CURRY:</p> <p>14 Right. It was just in front of you.</p> <p>15 MS. THOMPSON:</p> <p>16 Oh, I -- yeah.</p> <p>17 MS. CURRY:</p> <p>18 He didn't have it. That's all.</p> <p>19 MS. THOMPSON:</p> <p>20 Sorry.</p> <p>21 A Yeah, this -- okay.</p> <p>22 Yeah. So they -- they essentially went 23 through it in that kind of algorithm.</p> <p>24 MS. THOMPSON:</p>
<p>1 safe. I don't even know how to conduct an 2 experiment like that.</p> <p>3 MS. THOMPSON:</p> <p>4 Q Okay. And again, you know, I can't 5 answer that -- your question --</p> <p>6 A It's okay?</p> <p>7 Q -- is a fine answer. Yeah.</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 MS. THOMPSON:</p> <p>11 Q Back to the weight of the evidence 12 document, it's your understanding that this is 13 the evaluation that Health Canada applied to --</p> <p>14 A That's this one?</p> <p>15 Q Yeah.</p> <p>16 -- to answering the -- the question of 17 whether talcum powder was a risk for the public 18 in Canada; correct?</p> <p>19 MS. CURRY:</p> <p>20 Object to the form.</p> <p>21 A Correct.</p> <p>22 MS. THOMPSON:</p> <p>23 Q And they also applied a Bradford Hill 24 analysis? Is that your understanding from</p>	<p>1 Q I did not see any discussion in your 2 report of a methodology similar to this. Is that 3 right?</p> <p>4 A Correct.</p> <p>5 Q Did you perform a weight of the 6 evidence of the data in this case?</p> <p>7 A So I approached the expert report based 8 upon my experience, both scientifically and 9 clinical. We do this -- we do this a lot, 10 actually, where we'll do a complete review of the 11 literature and then extract the information, 12 dissect it in terms of paper by paper.</p> <p>13 As a scientist, we don't really weigh 14 studies in a quantitative way. We don't -- it's 15 really not like a meta-analysis where we're 16 saying, okay, this is -- this is this weight 17 versus that weight.</p> <p>18 But -- but the gestalt is, if you will, 19 at the end of the day, we look at these studies 20 and say do we believe -- do we think that the 21 data and results are believable; do they -- do 22 they support the conclusions. And we do that 23 individually through all the studies.</p> <p>24 And my expert report, I think, outlines</p>

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<p>1 that very clearly.</p> <p>2 So I guess the answer to your question</p> <p>3 is at the end of the day, the conclusion is that</p> <p>4 we don't think -- I don't think the data supports</p> <p>5 a biologic plausibility for talc versus -- talc</p> <p>6 and the -- as a role in the development of</p> <p>7 ovarian cancer. That's the sum total of all that</p> <p>8 analysis.</p> <p>9 Q Did you perform a Bradford Hill</p> <p>10 analysis, per se?</p> <p>11 A Not in the expert report. It's really</p> <p>12 focused on biologic plausibility. I'm aware of</p> <p>13 Bradford Hill. Prior depositions, we talked</p> <p>14 about the elements, and I feel like I -- I</p> <p>15 certainly understand those criteria.</p> <p>16 Q But at least in this report, you didn't</p> <p>17 apply the criteria to this subject?</p> <p>18 MS. CURRY:</p> <p>19 Object to the form.</p> <p>20 A It's really focused on biologic</p> <p>21 plausibility, which, as you know, is one</p> <p>22 component of it.</p> <p>23 MS. THOMPSON:</p> <p>24 Q Correct.</p>	<p>1 Q Is it a credible scientific</p> <p>2 organization?</p> <p>3 MS. CURRY:</p> <p>4 Object to the form.</p> <p>5 A I -- I think, to be fair, they -- they</p> <p>6 recognize this as a group that is careful and is</p> <p>7 invested in this. I would say, though, that</p> <p>8 they're not, as an organization, completely free</p> <p>9 of -- because of the way they're structured with</p> <p>10 WHO, completely free of outside influence or</p> <p>11 politics. That's my sense.</p> <p>12 MS. THOMPSON:</p> <p>13 Q And by outside influence and politics,</p> <p>14 where would that be coming from?</p> <p>15 A From World Health Organization, which</p> <p>16 is their sort of supervising body.</p> <p>17 Q And is it your belief that the World</p> <p>18 Health Organization is politically biased or</p> <p>19 subject to influence from outside?</p> <p>20 A Well, I think it's an organization</p> <p>21 that, by its nature, is, you know, a compendium</p> <p>22 of countries and societies. And, so, it's --</p> <p>23 let's just say it's not necessarily as sort of</p> <p>24 independent as the Academy, National Academy.</p>
<p>1 And you reviewed that IARC 2010</p> <p>2 document that we've marked as an exhibit; right.</p> <p>3 A This is when it was labeled as 2B;</p> <p>4 right?</p> <p>5 Q Yes.</p> <p>6 And -- and this -- well, this monograph</p> <p>7 was published in 2010; right?</p> <p>8 A Correct.</p> <p>9 Q Is it your understanding that it</p> <p>10 considered literature up to 2006? Correct?</p> <p>11 A Sounds about right, yes.</p> <p>12 Q What is IARC?</p> <p>13 A Well, it's an international agency for</p> <p>14 research on cancer. Part of what they -- their</p> <p>15 responsibility is to look at environmental</p> <p>16 risks for -- and -- and to sort of attempt to</p> <p>17 quantify them, identify them and quantify them</p> <p>18 for the development of cancer.</p> <p>19 Q Is it generally thought to be a</p> <p>20 reputable scientific organization?</p> <p>21 MS. CURRY:</p> <p>22 Object to the form.</p> <p>23 A How do you define "reputable"?</p> <p>24 MS. THOMPSON</p>	<p>1 Q And by that you mean the National</p> <p>2 Academy of Science and Medicine Engineering, now</p> <p>3 titled?</p> <p>4 A Yes.</p> <p>5 Q Okay. And I believe we talked about</p> <p>6 before this --</p> <p>7 A Uh-huh.</p> <p>8 Q -- this monograph applies to talc not</p> <p>9 containing asbestos fibers, but that is not</p> <p>10 your area of expertise; correct?</p> <p>11 MS. CURRY:</p> <p>12 Object to the form.</p> <p>13 A Correct.</p> <p>14 MS. THOMPSON:</p> <p>15 Q And you are aware that there's a</p> <p>16 different IARC monograph published in 2012 that</p> <p>17 would cover talc containing asbestos or talc</p> <p>18 containing asbestos fibers; correct?</p> <p>19 A I don't think I've seen that.</p> <p>20 Q That would be 2012, the 100C. I</p> <p>21 believe it's on your --</p> <p>22 A Is it?</p> <p>23 Q -- reliance list.</p> <p>24 A Do you have a copy?</p>

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1	Q Yeah. It's number 77.	1 Object to the form.
2	A 77.	2 A It's detailed.
3	Q Arsenic, Metals, Fibers and Dust?	3 MS. THOMPSON:
4	A Oh, I think I -- I'm sorry. That's	4 Q Going to the FDA response letter, at
5	coming back to me. It was a small -- yeah.	5 least by volume, would you agree that this FDA
6	Q And did you -- did you review that IARC	6 letter is a less extensive review?
7	monograph?	7 MS. CURRY:
8	A Yeah. There was a -- what -- what	8 Object to the form.
9	I looked at was a subset of the entire document.	9 A Less pages.
10	Yeah.	10 MS. THOMPSON:
11	Q Did you look at the section with	11 Q That's kind of what I was getting at.
12	asbestos?	12 How about references?
13	MS. CURRY:	13 A Yeah.
14	Object to the form.	14 Q So, essentially, the FDA response
15	A I believe so, yeah.	15 letter in 2014 does not include a description of
16	MS. THOMPSON:	16 the methodology or an extensive reference list.
17	Q Did you look at the section with heavy	17 Is a that fair --
18	metals?	18 MS. CURRY:
19	A No.	19 Object to the form.
20	Q Are you aware that that document, 2012,	20 MS. THOMPSON:
21	100C, includes all forms of asbestos and talc	21 Q -- statement?
22	containing asbestiform fibers?	22 A Well, I -- again, I think a little bit
23	A That sounds correct.	23 you're comparing apples and oranges in the sense
24	Q But you're not sure about that today?	24 that the purpose for these documents is somewhat
	Page 71	Page 73
1	MS. CURRY:	1 different in that this is a letter from the FDA
2	Object to the form.	2 in response to a -- I think it was a citizen's
3	A Well, as I said, I'm not a asbestos	3 petition. They're not gonna give -- they're not
4	expert. But that -- that IARC volume is focused	4 gonna send this back to a citizen's petition
5	on fibers, so that makes sense.	5 because I think the citizen's petition would be
6	MS. THOMPSON:	6 insulted because they're not going to be able to
7	Q And have you reviewed the preamble to	7 read it. It's more of a letter than the -- what
8	the IARC monographs? It's included in --	8 their opinion is.
9	A Yeah.	9 Oh. Sorry.
10	Q -- in exhibit --	10 Q And you're referring to that IARC --
11	A I looked through it.	11 A Yeah.
12	Q Okay.	12 Q -- 2010 monograph. Yeah.
13	A It's voluminous.	13 A Yeah.
14	Q And does that describe the -- the	14 Q Fair enough.
15	methodology that IARC applies when it's looking	15 However, you would consider the FDA a
16	to determine whether a substance is carcinogenic	16 credible source?
17	or not?	17 A Yes.
18	A Yes. It's a list of all the	18 Q Let's look at your CV. And you have
19	participants, the general principles, the	19 been a prolific researcher. Would you agree?
20	methodology.	20 A I survive.
21	Q And you would agree, similar to Health	21 Q I -- I think there are approximately
22	Canada, that that methodology is extensive as	22 400 published papers. Is that close?
23	well?	23 A Correct.
24	MS. CURRY:	24 Q You have a lot of coauthors on these

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<p>1 papers. Am I right?</p> <p>2 A Correct.</p> <p>3 Q On some, you're the lead author;</p> <p>4 correct?</p> <p>5 A Correct.</p> <p>6 Q What does the role of lead author</p> <p>7 usually entail?</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A So let me -- let me step back and</p> <p>11 define that. I would say anchor positions.</p> <p>12 MS. THOMPSON:</p> <p>13 Q Okay.</p> <p>14 A So first author is usually the person</p> <p>15 who has done most of the work. And, it</p> <p>16 actually -- my first authorship positions have</p> <p>17 sort of faded with time because I take the other</p> <p>18 anchor position, which is the senior author,</p> <p>19 where you're providing guidance, mentorship, and</p> <p>20 then you -- you ultimately are responsible for</p> <p>21 the quality of the paper.</p> <p>22 Q And -- and that --</p> <p>23 A Yeah.</p> <p>24 Q -- that person is -- is often listed</p>	<p>1 A No. I think OCAC is a lot like that.</p> <p>2 MS. THOMPSON:</p> <p>3 Q They're providing tissue samples or are</p> <p>4 they providing expertise?</p> <p>5 A Well, OCAC is the consortium, so</p> <p>6 it's -- it's composed of all of those</p> <p>7 institutions. And those institutions are</p> <p>8 providing specimens. And then the authors from</p> <p>9 those institutions end up on the paper.</p> <p>10 Q How are the authors of the consortium's</p> <p>11 publications selected?</p> <p>12 MS. CURRY:</p> <p>13 Object to the form.</p> <p>14 A Specific in GWAS or in general?</p> <p>15 MS. THOMPSON:</p> <p>16 Q In OCAC.</p> <p>17 A OCAC. Well, I'm not sure I can quote</p> <p>18 you OCAC rules, but the general guidelines would</p> <p>19 be that from every institution that participated,</p> <p>20 there'd be a primary author. If -- if there was</p> <p>21 somebody else at the institution who specifically</p> <p>22 did something important for that paper, they</p> <p>23 might take two authors. But usually there's a</p> <p>24 limit because you just -- OCAC, I believe, has --</p>
<p style="text-align: center;">Page 75</p> <p>1 last. Is that right?</p> <p>2 A That's right.</p> <p>3 Q Okay. And can I assume that the</p> <p>4 authors in the middle have varying roles but all</p> <p>5 participate in the preparation of the manuscript</p> <p>6 in some sense?</p> <p>7 A Right. I mean, it becomes -- you</p> <p>8 probably can guess -- somewhat problematic when</p> <p>9 you look at GY studies when there are almost more</p> <p>10 authors than specimens. So the idea there is</p> <p>11 that the individuals in -- in between are still</p> <p>12 contributing to the paper. They're -- they may</p> <p>13 be providing specimens.</p> <p>14 Q And I believe in GWAS, the -- the</p> <p>15 recruitment for GWAS are researchers that can</p> <p>16 provide tissue specimens for the group that's</p> <p>17 analyzing them. Is that a fair --</p> <p>18 A It's a big point. It's -- it's a big</p> <p>19 part of it. Yeah.</p> <p>20 Q And you'd agree that that's different</p> <p>21 from the consortium that we discussed earlier,</p> <p>22 that OCAC consortium; right?</p> <p>23 MS. CURRY:</p> <p>24 Object to the form.</p>	<p style="text-align: center;">Page 77</p> <p>1 I'm guessing -- 50 to maybe even 100</p> <p>2 institutions. So if you were to allow unlimited</p> <p>3 authors, it would be unmanageable.</p> <p>4 Q Would the authors typically be</p> <p>5 considered to have expertise in the particular</p> <p>6 area that they're publishing in?</p> <p>7 A Yes.</p> <p>8 Q Would they typically have previous</p> <p>9 scholarly work or publications?</p> <p>10 MS. CURRY:</p> <p>11 Object to the form.</p> <p>12 A Usually.</p> <p>13 MS. THOMPSON:</p> <p>14 Q Would they typically have a -- a good</p> <p>15 reputation in the scientific or medical</p> <p>16 community?</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 A I hope so.</p> <p>20 MS. THOMPSON:</p> <p>21 Q Would they typically be knowledgeable</p> <p>22 in that respective field that they're called upon</p> <p>23 to contribute to the --</p> <p>24 MS. CURRY:</p>

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<p>1 Object to the form.</p> <p>2 A Yeah. I mean, I think it would be</p> <p>3 very -- again, these GWAS studies -- I'm sorry --</p> <p>4 the GWAS studies are in some ways really unique</p> <p>5 in that there's so many authors. There may be</p> <p>6 individuals in that list who -- who while they're</p> <p>7 ovarian cancer researchers, they could be fairly</p> <p>8 junior, and they may have just provided some</p> <p>9 specimens. Yeah.</p> <p>10 MS. THOMPSON:</p> <p>11 Q Yeah. And I'm not as interested in the</p> <p>12 GWS because they do have, you know, a whole</p> <p>13 number.</p> <p>14 A Yeah.</p> <p>15 Q But I'm thinking more of the Australian</p> <p>16 consortium, the OCAC, the -- the other ones where</p> <p>17 it looks, at least by appearance, that you're --</p> <p>18 the authors are chosen because they're experts</p> <p>19 in -- in a particular area. For example,</p> <p>20 epidemiology. Would you agree with that</p> <p>21 statement?</p> <p>22 MS. CURRY:</p> <p>23 Object to the form.</p> <p>24 A I think that's true -- I think that's</p>	<p>1 of careful thought.</p> <p>2 MS. THOMPSON:</p> <p>3 Q And -- and I'd assume they'd be</p> <p>4 qualified in their area of expertise for the same</p> <p>5 reason, or else you wouldn't choose them. Right?</p> <p>6 A It would be hard for them to contribute</p> <p>7 in a meaningful way if they don't know what</p> <p>8 they're doing.</p> <p>9 Q Okay. Looking at your CV, are there</p> <p>10 any coauthors that you can identify that you</p> <p>11 would not regard as qualified in their respective</p> <p>12 fields?</p> <p>13 A I'm not gonna be able to answer that.</p> <p>14 I've got 400 publications and probably several</p> <p>15 thousand authors.</p> <p>16 Q So do you think there would be some</p> <p>17 that you could identify as not being credible?</p> <p>18 A Not that I know of.</p> <p>19 MS. CURRY:</p> <p>20 Object to the form.</p> <p>21 A Again, this is realtime, so if we go</p> <p>22 back to my Ph.D., which was on the measles virus</p> <p>23 back when I was a young lad, I don't know that</p> <p>24 field anymore, and I don't know what those</p>
<p>1 true as a -- as general guideline, yeah.</p> <p>2 MS. THOMPSON:</p> <p>3 Q And would the same be true for a paper</p> <p>4 that you're publishing? Would you look for</p> <p>5 coauthors -- either as an anchor or a senior,</p> <p>6 would you look for coauthors that are credible?</p> <p>7 A Well, you know, when you do these</p> <p>8 experiments, you're not really out looking for</p> <p>9 authors. You're doing the experiments, and the</p> <p>10 people who do them, help you design a project,</p> <p>11 deserve authorship. Those are the guidelines.</p> <p>12 And if you're asking would I put</p> <p>13 somebody who I thought was not credible on an</p> <p>14 author list, I'd be very bothered by that. But</p> <p>15 you'd have to define what "credible" means.</p> <p>16 Q Yeah. So I guess rather than choosing</p> <p>17 someone as a coauthor, I should have rephrased</p> <p>18 that. Choosing someone to work on a project that</p> <p>19 would later be published, you can assume that</p> <p>20 person would be credible; correct?</p> <p>21 MS. CURRY:</p> <p>22 Object to the form.</p> <p>23 A Yeah. I choose my collaborators, like</p> <p>24 others, other scientists, with a certain amount</p>	<p>1 individuals have done.</p> <p>2 It's a realtime process. Sometimes</p> <p>3 individuals who seem to be very, very good</p> <p>4 scientists later on in life will get involved in</p> <p>5 scientific misconduct. That may not have been at</p> <p>6 all relevant for when you put that person on your</p> <p>7 paper.</p> <p>8 (DEPOSITION EXHIBIT NUMBER 8</p> <p>9 WAS MARKED IDENTIFICATION.)</p> <p>10 MS. THOMPSON:</p> <p>11 Q I'm gonna just give you a list of some</p> <p>12 coauthors that I pulled off your CV. And would</p> <p>13 you look at that list?</p> <p>14 A Uh-huh.</p> <p>15 Q I narrowed it down from a couple</p> <p>16 thousand to a more manageable number. Are there</p> <p>17 any names on that list that you could identify as</p> <p>18 not being credible?</p> <p>19 MS. CURRY:</p> <p>20 Object to the form.</p> <p>21 MS. THOMPSON:</p> <p>22 Q And that list is marked as Exhibit --</p> <p>23 Dr. Birrer, can you --</p> <p>24 A 8.</p>

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1	Q -- 8.	1 sense is they command the market. But I'm not --
2	A So I would say of this list,	2 I'm not in the supermarket a lot.
3	probably -- I'm estimating -- about 20 percent of	3 Q And not in the baby powder section?
4	these people, I'm -- I'm not sure I quite	4 A No.
5	remember what paper they're on. But the rest of	5 Q And what is contained in the
6	them I know because they're high profile. I	6 Johnson's -- in Johnson's baby powder, to your
7	don't see anybody here that I would say is not a	7 understanding?
8	good scientist.	8 MS. CURRY:
9	Q And qualified in their respective	9 Object to the form.
10	areas?	10 A Talc. And I know that's an issue
11	A Yes.	11 that's come up in terms of are there other
12	MS. CURRY:	12 things. I mean, clearly there are other things
13	Object to the form.	13 that -- the product smells nice, so there must be
14	MS. THOMPSON:	14 some fragrance.
15	Q And some -- at least some on the list	15 MS. THOMPSON:
16	you published with multiple times. Is that fair	16 Q Okay.
17	to say?	17 A But I don't know of any -- first of
18	A Yeah.	18 all, I don't -- that's not my area of expertise.
19	Q Dr. Birrer, throughout your report you,	19 I've certainly never conducted any experiments
20	at least at times, used the term "talc." What	20 and tried to figure out what's in it and -- and
21	are you referring to when you say talc?	21 wouldn't consider myself an expert in the whole
22	A So there's two levels of relevance	22 mineralogy issue.
23	here. One is for epidemiologic studies or	23 Q So that would be talc, the mineral. Do
24	studies that were -- that were conducted. A	24 you have an opinion as to whether there is a such
	Page 83	Page 85
1	subset of the -- of the studies that were	1 thing as pure talc?
2	conducted in the lab were actually dealing with	2 MS. CURRY:
3	talcum powder.	3 Object to the form.
4	But there are experiments in particular	4 A You know, my -- you know, my sense is
5	where individuals are using sigma-produced talc.	5 in that some of the experiments where this
6	So it's -- it's -- it's a bit of a mixture. But	6 product is actually bought not cosmetically, but
7	I think, in particular in the epi studies, a lot	7 I've seen references to sigma-produced talc, that
8	of them are just okay to use powder.	8 that's a -- that's a purified form of it.
9	Q So to -- to the extent both of us can,	9 MS. THOMPSON:
10	we can try to say whether we're referring to	10 Q And, so, by pure -- purified form, you
11	talcum powder or talc, as you described, so	11 would mean that it does not con- -- contain
12	let's -- let's both try to do that, to the extent	12 impurities; correct?
13	possible, because it can get confusing.	13 A It would not contain something else.
14	A I completely concur.	14 Q Would you consider it pure if it
15	Q Okay. Okay. I'm glad we agree on	15 contained talc fibers?
16	that.	16 MS. CURRY:
17	Do you know what Johnson & Johnson's	17 Object to the form.
18	market share of the talcum powder product has	18 A I don't -- I don't think I can answer
19	been over the years?	19 that.
20	A I don't.	20 MS. THOMPSON:
21	Q If I told you it was 60 to 70 percent,	21 Q So no opinion on -- on that issue.
22	would you have any basis to disagree with that	22 A Yeah.
23	number?	23 Q Are you familiar with the various
24	A I actually wouldn't, because I -- my	24 grades of talc?

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1	A No.	1 Q It was the -- it was a report that
2	Q Do you have any knowledge regarding the	2 addressed the fragrance chemicals in talcum
3	particle size of Johnson's baby powder or Shower	3 powder. Do you remember seeing that? I don't
4	to Shower?	4 remember whether it's on your list. Oh.
5	A Again, that's a little bit outside my	5 A Is that plaintiff?
6	area of expertise. My understanding is, you	6 Q You don't have Dr. Crowley's report.
7	know, talc ranges from 10 microns to larger	7 A Yeah.
8	sizes. But it's not something I systematically	8 Q Did you know if there was a -- an
9	explored. Even the expert reports here that	9 expert report that specifically addressed the
10	focused on the mineralogy, I looked at it but not	10 fragrance -- fragrance chemical presence in baby
11	in any great detail.	11 powder?
12	Q And if you were told that there are	12 A Not that I know of.
13	also smaller particles than 10 microns, that	13 Q So I -- I can assume that you don't
14	wouldn't surprise you?	14 know why you weren't provided Dr. Crowley's
15	A I think there's a range.	15 report?
16	Q Fair enough.	16 MS. CURRY:
17	A I don't know how -- you know, again, I	17 Object to the form.
18	know there's references to ultrafine, et cetera,	18 A It's not on my list.
19	et cetera. I don't have definitive knowledge or	19 MS. THOMPSON:
20	data that that is true.	20 Q Did you ask if anyone had looked at the
21	Q Okay. But, as far as you know, the	21 actual chemicals in baby powder?
22	particle size is -- is mixed?	22 A I didn't specifically go through that,
23	A Uh-huh.	23 no.
24	Q It's not a standard size like you might	24 Q It -- is it important for you to know
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1	see, for example, in a pleurodesis talc?	1 the quality of talcum powder?
2	MS. CURRY:	2 MS. CURRY:
3	Object to the form.	3 Object to the form.
4	A I don't -- I can't say that.	4 A And how do you define "quality"?
5	MS. THOMPSON:	5 MS. THOMPSON:
6	Q Okay.	6 Q I -- I define "quality" as the absence
7	A But based on my rudimentary	7 of the amount and types of impurities.
8	understanding of mineralogy here, that there's a	8 MS. CURRY:
9	range.	9 Object to the form.
10	Q Have you ever looked at the label on a	10 A How do you define "impurities"?
11	bottle of baby powder?	11 MS. THOMPSON:
12	A I don't recall that.	12 Q Something that's not pure talc.
13	Q So you don't know what would be listed	13 A Okay. Again, I -- I'll come back to
14	on the label?	14 this theme. I think -- I didn't go down that
15	A No.	15 road. It's not my area of expertise. But, more
16	Q But you're assuming it has some kind of	16 importantly, I was asked to sort of review the
17	fragrances in it?	17 total data that suggested there might be a role
18	A I think that's a safe assumption. I	18 for talc in ovarian cancer, regard -- talcum
19	have smelled it.	19 powder, regardless of what's in it.
20	Q Haven't we all.	20 So in that context, impurities,
21	Did you read Dr. Crowley's report?	21 fragrance, heavy metals, it doesn't matter. We
22	Do you remember Dr. Crowley's report?	22 would see the data. So I felt pretty comfortable
23	A That's not coming to mind. Can -- do	23 that that's the -- that's the important theme for
24	you have it?	24 my job.

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<p>1 Q Is it important for you to know the 2 min- -- mineral content of a talcum powder 3 product if you are intending to assess its 4 potential health effects?</p> <p>5 MS. CURRY: 6 Object to the form.</p> <p>7 A Would you just repeat that, please?</p> <p>8 MS. THOMPSON: 9 Q Is it important to know the mineral 10 content of a talcum powder product if you are 11 intending to assess its potential health effects?</p> <p>12 MS. CURRY: 13 Object to the form.</p> <p>14 A You know, again, I think in terms of 15 reviewing the literature, no. I mean, it's 16 talcum and it's talcum powder. It's a 17 representative of what's on the market.</p> <p>18 So regardless of what's there or not, 19 even from a mineral standpoint, we can make a 20 judgment as to whether that's providing data that 21 supports whether it's a risk factor or biologic 22 plausibility for a role in development of ovarian 23 cancer.</p> <p>24 MS. THOMPSON:</p>	<p>1 MS. THOMPSON: 2 Q For a potential health effect.</p> <p>3 MS. CURRY: 4 Object to the form.</p> <p>5 A There's no data for that. I can't 6 develop a mechanism when, in fact, there's no 7 biologic plausibility for talcum powder in a role 8 of ovarian cancer.</p> <p>9 MS. THOMPSON: 10 Q Well, it sounds like what you're saying 11 is if you decide that talcum powder doesn't cause 12 ovarian cancer, then there's no reason to even 13 look at whether there's a plausible mechanism or 14 not.</p> <p>15 MS. CURRY: 16 Object to the form.</p> <p>17 MS. THOMPSON: 18 Q Is that --</p> <p>19 A Well, I'm not sure what mechanism we're 20 looking at. We're looking at a mechanism that an 21 agent doesn't cause cancer? That does -- makes 22 no sense to me.</p> <p>23 Q We're looking at what a mechanism could 24 be if it could cause cancer, as a hypothetical.</p>
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<p>1 Q So even in your determination of 2 whether a biologic mechanism is plausible or not, 3 it doesn't matter what the mineral content of the 4 baby powder is?</p> <p>5 MS. CURRY: 6 Object to the form.</p> <p>7 A As long as that baby powder's been 8 tested in that experiment, it doesn't matter.</p> <p>9 MS. THOMPSON: 10 Q And that goes for whether the baby 11 powder contains asbestos?</p> <p>12 A Well, again, I -- I think if it 13 contained asbestos, that would show a signal in 14 those experiments. Now, we would see it. We may 15 not know it's related to asbestos, fragrance or 16 whatever, but the experiments would be 17 reproducible and dispositive. And in my 18 experience, they're not.</p> <p>19 Q But the question is, does that -- would 20 that explain a mechanism if there's asbestos in 21 the baby powder?</p> <p>22 MS. CURRY: 23 Object to the form.</p> <p>24 A Mechanism for what?</p>	<p>1 MS. CURRY: 2 Object to the form.</p> <p>3 A No. I -- a mechanism for a 4 hypothetical. I -- you know, again, that -- we 5 don't need the hypothetical. We've tested talcum 6 in those experiments. There's no data to support 7 biologic plausibility. So why are -- why would 8 we be trying to think about a hypothetical 9 component to produce a mechanism for a biologic 10 activity that we haven't seen?</p> <p>11 MS. THOMPSON: 12 Q What experiments are you referring to?</p> <p>13 A I would say primarily the ones that are 14 in my expert report. That really is a sum- --</p> <p>15 Q Which experiments in your report? We 16 can go through your report if you want.</p> <p>17 A I'm -- yeah.</p> <p>18 Q I'm looking for the experiments that 19 show that there's no biologic effect.</p> <p>20 A So Buz'Zard is one that frequently --</p> <p>21 Q And is it your opinion that Buz'Zard 22 shows no biologic effect?</p> <p>23 A There's nothing in that paper that's 24 reliable in terms of showing biologic</p>

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<p>1 plausibility.</p> <p>2 Q And we'll get to the others.</p> <p>3 So you're referring to --</p> <p>4 A Yes.</p> <p>5 Q -- Buz'Zard, Shukla?</p> <p>6 A Shukla. Just hang on. Yeah.</p> <p>7 Buz'Zard, Shukla and Hamilton.</p> <p>8 Q And I'm going to assume you include</p> <p>9 Dr. Saed in that?</p> <p>10 A Correct.</p> <p>11 Q Although we're going to get into more</p> <p>12 detail in that later.</p> <p>13 A Exactly.</p> <p>14 Q And you're aware of the other animal</p> <p>15 studies that show inflammatory effects; right?</p> <p>16 MS. CURRY:</p> <p>17 Object to the form.</p> <p>18 A You have to go through those and define</p> <p>19 that.</p> <p>20 MS. THOMPSON:</p> <p>21 Q Okay.</p> <p>22 A Because it's pretty broad literature.</p> <p>23 You're assuming -- you're referring to</p> <p>24 Keskin?</p>	<p>1 What is your understanding of how these</p> <p>2 products are used by women?</p> <p>3 MS. CURRY:</p> <p>4 Object to the form.</p> <p>5 A Baby powder?</p> <p>6 MS. THOMPSON:</p> <p>7 Q And -- and we're talking about, at</p> <p>8 least for these cases, in the perineal area.</p> <p>9 A Yeah.</p> <p>10 Q Do you have any knowledge from</p> <p>11 conversations with women or literature or any</p> <p>12 other source as to how it's applied, whether it's</p> <p>13 standing, lying down, in the underwear, on a</p> <p>14 sanitary napkin, shaken into hands? Did you have</p> <p>15 any understanding of -- of those issues?</p> <p>16 MS. CURRY:</p> <p>17 Object to the form.</p> <p>18 A I would say not a systematic, shall we</p> <p>19 say, meta-analysis of baby powder use. I</p> <p>20 certainly, over years in the clinic, am familiar</p> <p>21 with women who use baby powder. You know, my</p> <p>22 sense is that most dust the perineum usually</p> <p>23 standing up. I -- but again, I can't say that's</p> <p>24 a scientific evaluation. I have some experience</p>
<p>1 Q There are studies going back to the</p> <p>2 '40s and '50s with intraperitoneal inflammatory</p> <p>3 effects with -- in the presence of talc.</p> <p>4 You're aware of those?</p> <p>5 MS. CURRY:</p> <p>6 Object to the form.</p> <p>7 A There is a big literature.</p> <p>8 MS. THOMPSON:</p> <p>9 Q And understanding that there are</p> <p>10 different histologic subtypes of epithelial</p> <p>11 ovarian cancer, can we agree that if one of us</p> <p>12 refers to ovarian cancer in a general sense, that</p> <p>13 we're referring to epithelial ovarian cancer?</p> <p>14 A I would not include germ -- you know,</p> <p>15 germ cell tumors in this.</p> <p>16 Q Stromal -- we're excluding stromal --</p> <p>17 A And stromal, yeah. It's epithelial,</p> <p>18 correct.</p> <p>19 Q Okay. So we're on the same page there?</p> <p>20 A With -- with the caveat being, and we</p> <p>21 do discuss this in the report about -- even</p> <p>22 within the epithelial component, we now realize</p> <p>23 there are different types of tumors.</p> <p>24 Q Understood.</p>	<p>1 with my wife. So I -- I -- it's a certain --</p> <p>2 some general concept of how it's done, yeah.</p> <p>3 MS. THOMPSON:</p> <p>4 Q Would you agree, at least, that, for</p> <p>5 most women, it would be applied in a -- in a</p> <p>6 habitual manner?</p> <p>7 MS. CURRY:</p> <p>8 Object to the form.</p> <p>9 A Yeah, I think it's important to define</p> <p>10 that. It would certainly be repetitive. Is it</p> <p>11 something -- you know, habitual sounds to me</p> <p>12 like -- almost like an addict. And I don't -- I</p> <p>13 don't think that's the case.</p> <p>14 MS. THOMPSON:</p> <p>15 Q No. I didn't mean it -- mean in that</p> <p>16 term.</p> <p>17 I meant that it's -- and this has been</p> <p>18 reported in the literature, I believe you're</p> <p>19 aware --</p> <p>20 A Uh-huh.</p> <p>21 Q -- that most women do it the same way</p> <p>22 every day or whatever schedule they're on.</p> <p>23 MS. CURRY:</p> <p>24 Object to the form.</p>

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<p>1 A I would think that there'd be some 2 consistency on that. I -- I will say this 3 parenthetically, you may get to it later on, but 4 I do think, based on what we're just discussing, 5 it's very hard to -- it's very hard to quantify 6 amount of use. I really do. 7 MS. THOMPSON: 8 Q And I think we will get to that. 9 A Okay. 10 Q But -- but -- so it's hard to quantify 11 how much a woman is using on any given 12 application; correct? 13 A (Nods affirmatively.) 14 Q And it's hard -- 15 MS. CURRY: 16 You have to say "yes" or "no" versus 17 head shakes because the court reporter will not 18 be able to get that down. 19 A It says "nods affirmatively." 20 Yes. 21 MS. CURRY: 22 She was able to in that instance. I 23 stand corrected, but for -- 24 THE WITNESS:</p>	<p>1 be true for a number of environmental 2 exposures -- 3 MS. CURRY: 4 Object to the form. 5 MS. THOMPSON: 6 Q -- that difficulty in quantifying how 7 much a particular individual is exposed to? 8 A Well, you'd have to give me some 9 examples on that. I mean, I think for cigarette 10 smoke, it actually is quite quantifiable. 11 Q Cigarette smoke, I agree. 12 How about a household or domestic 13 exposure to asbestos, for example? 14 A I guess you could quantify the amount 15 of asbestos-containing material in the house, 16 but -- 17 Q How about a spouse coming home from 18 occupational exposure? 19 A Yeah. It would be a challenge. 20 Q How about chemicals in water source? 21 A That should be measurable. 22 Q Over time? 23 A Multiple samples. 24 Q How about --</p>
<p>1 She's very good. 2 MS. THOMPSON: 3 Q And -- and if there were talc that 4 reached the vagina or the upper genital tract, it 5 would be hard to quantify how much that would be; 6 right? 7 A Yes. 8 Q But you'll have to agree, but -- that 9 not being able to quantify it isn't a reason not 10 to study the issue. Right? 11 MS. CURRY: 12 Object to the form. 13 A I think that's a fair statement in 14 that, you know, if it's important, you need to do 15 it. I just think that, for the reasons you just 16 said, quantifying it is -- is difficult, not only 17 in individual applications, how much actually 18 would get where, but this longitudinal issue. 19 While I think there's some consistency, do women 20 use it for a while and then stop using it and how 21 often do they change? I think there's a whole 22 issue on that, too. 23 MS. THOMPSON: 24 Q And wouldn't you agree that that would</p>	<p>1 A And -- and potentially even the 2 patient. 3 Q How about exposure to a pesticide? 4 A Yeah. That would be more of a 5 challenge. Yeah. 6 Q So there's certainly other -- 7 A Some variability. 8 Q -- other situations where it's 9 challenging to quantify the exposure to an 10 individual over time. 11 MS. CURRY: 12 Object to the form. 13 A Yes. 14 MS. THOMPSON: 15 Q Other than a literature or document 16 review, you -- I think I asked you this before 17 but I'm gonna just ask it again since it's in my 18 outline here. 19 Other than a literature and document 20 review, have you done any research on talcum 21 powder and ovarian cancer? 22 A No. 23 Q And that would include in vitro 24 research and in vivo; correct?</p>

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1	A	Correct.	1 Q Do you know why she's no longer an expert?
2	Q	And you've never published an article on talcum powder and ovarian cancer. Is that correct?	2 A I don't.
3	A	No.	3 Q Do you know Dr. Huh?
4	Q	Have you ever given a talk on talcum powder and ovarian cancer?	4 A I do know Dr. Huh. Warner. Uh-huh.
5	A	No.	5 Q Do you know why Dr. Huh is not serving as an expert for the defendants in the MDL?
6	Q	Have you discussed your opinions in this case with anyone?	6 A No.
7	A	No, other than counsel.	7 Q Does University of Alabama know that you are serving as a paid expert for Johnson & Johnson --
8	Q	No colleagues?	8 A Yes.
9	A	No.	9 Q -- in this case?
10	Q	Did you attend the recent SGO conference in Hawaii?	10 A Do you know how much money Johnson & Johnson has contributed to the University of Alabama and your lab?
11	A	Hawaii's a nice place. I did.	11 MS. CURRY: Object to the form.
12	Q	Did you discuss talcum powder with any of your colleagues at the meeting?	12 A I --
13	A	I'd never been there before.	13 MS. THOMPSON: Let me rephrase that question because I don't like being "contributed."
14	Q	I did not.	14 Q Do you know how much money Johnson & Johnson has paid to University of
15	A	Do you know Liz Swisher?	15 A Alabama?
16	Q	I do know Liz, yes.	16 A No.
17	A	Do you know her from professional meetings and other interactions?	17 Q Do you know how much money Johnson & Johnson has paid to support your lab?
18	Q		18 MS. CURRY: Object to the form.
19	A		19 A None.
20	Q		20 MS. CURRY: We've been going over an hour and a half. Whenever it's a good breaking point for you.
21	A		21 MS. THOMPSON: I think maybe less than five minutes --
22	Q		22 MS. CURRY: No problem.
23	A		23 MS. THOMPSON: -- and it's a great break time.
24	Q		24 A I may be in kidney failure soon.

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1	can --	1 MS. THOMPSON:
2	A Boat's not a good choice.	2 Q How about what is sometimes used in the
3	Q Yeah. I should have used a different	3 literature, elongated mineral fibers? Does that
4	word there.	4 sound familiar?
5	We talked about the methodology that	5 A It sounds consistent with some of the
6	you applied, but -- but it's not included, per	6 things I read, but I certainly did not pursue
7	se, in the report.	7 that sort of mineralogy review.
8	Can you refer to me -- me to any	8 Q So no comprehensive review on what's
9	published article, textbook chapter, anything	9 called EMP sometimes.
10	that actually describes Dr. Birrer's methodology?	10 MS. CURRY:
11	MS. CURRY:	11 Object to the form.
12	Object to the form.	12 A No.
13	A No. Again, I -- I think this relates	13 MS. THOMPSON:
14	to what a lot of us in the field on my level do	14 Q And I can assume that you didn't do a
15	routinely, and so it's not really defined. But	15 comprehensive review on heavy metals --
16	when we review literature, a topic, I wouldn't	16 A Correct.
17	want to -- I don't want to call it a	17 Q -- and ovarian cancer?
18	meta-analysis because that's a formal process.	18 A Yes.
19	But we -- we -- we do the right -- we do the same	19 Q Or fragrance chemicals and ovarian
20	thing. If we do it right, then it's	20 cancer?
21	comprehensive and then we make opinions on those	21 A Correct.
22	papers. That's the methodology.	22 Q Do you agree that scientists can look
23	MS. THOMPSON:	23 at the same body of literature and reach
24	Q Okay.	24 different conclusions, in a general sense?
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1	A It's more of a scientific lab-based	1 A You know, again, I think if the body
2	approach.	2 of -- of data and literature is substantive and
3	Q Okay. And did you apply the same	3 clear, I think that a reasonable scientist, a
4	standards for this report that you would use if	4 competent scientist will come to the same
5	you were publishing a paper, for example, a	5 conclusion.
6	review article like we discussed before?	6 Q So is it your opinion that a scientist
7	A I think so, yes.	7 who looks at the baby powder literature or talcum
8	Q Would you be willing to have the	8 powder literature and concludes something
9	opinions that you've provided in this report	9 different from you is unreasonable and
10	peer-reviewed if that were appropriate?	10 incompetent?
11	A Essentially, yes. Yeah. Yeah.	11 MS. CURRY:
12	Q And I think we've discussed this, but	12 Object to the form.
13	does -- in your opinion, you performed a	13 A I -- I would say they got it wrong.
14	comprehensive literature review on the subject of	14 MS. THOMPSON:
15	talc and ovarian cancer; correct?	15 Q They got it wrong. But what about
16	A Correct.	16 unreasonable?
17	Q But am I correct to say that you did	17 MS. CURRY:
18	not perform the same comprehensive literature	18 Object to the form.
19	review for asbestos and ovarian cancer?	19 A I don't -- I wouldn't use that term. I
20	A Correct.	20 would say that they looked at the data and
21	Q Fibrous talc in ovarian cancer?	21 misinterpreted it.
22	MS. CURRY:	22 MS. THOMPSON:
23	Object to the form.	23 Q And would you say the same about their
24	A Didn't use that term.	24 competence?

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<p>1 MS. CURRY: 2 Object to the form. 3 A I think -- you know, labeling that as 4 incompetent is not appropriate. 5 MS. THOMPSON: 6 Q Well, you said, I think that a 7 reasonable scientist, competent scientist will 8 come to the same conclusion. Wouldn't that imply 9 that if they come to a different inclusion -- 10 conclusion, that they're unreasonable or 11 incompetent? 12 A Well, I think I prefaced that with if 13 the body of science we're looking at is -- is -- 14 it's convincing and strong and reproducible, that 15 reasonable scientists will come to the same 16 conclusion. 17 When the data is really unconvincing, 18 which is what we're dealing with here -- this 19 data is not convincing -- there's no data for 20 talc being involved in ovarian cancer, then you 21 get this disparate opinions. And -- and they've 22 got it wrong. And I made the -- 23 Q They've got it -- sorry. 24 A And I've made the argument why I got it</p>	<p>1 A Okay. 2 MS. CURRY: 3 Can we take a break? 4 A It looks like you're coming to an end. 5 MS. THOMPSON: 6 Q We are. Well, not the end of the day. 7 The end of the section. 8 A Hope springs eternal. 9 Q Wishful thinking. 10 One -- one more question, then we're 11 done. 12 A Sure. 13 Q What does "proof" mean to you? 14 MS. CURRY: 15 Object to the form. 16 MS. THOMPSON: 17 Q In a scientific sense. 18 A That would be evidence to support the 19 conclusion. 20 Q To convincingly support the conclusion? 21 MS. CURRY: 22 Object to the form. 23 A I'm not sure I need that adjective 24 there.</p>
<p>1 right. 2 Q Okay. They've got it wrong? 3 A Uh-huh. 4 Q You have it right. 5 A Uh-huh. 6 Q But I'm trying to find -- figure out 7 how you think they got it wrong. Were they 8 misinformed? 9 MS. CURRY: 10 Object to the form. 11 A They misinterpreted the data. 12 MS. THOMPSON: 13 Q They misinterpreted the data. 14 A Yeah. 15 Q And you would say they misinterpreted 16 the data even though they interpreted the data in 17 the same way that the authors presenting the data 18 pre- -- interpreted it? 19 MS. CURRY: 20 Object to the form. 21 A We'd have to go through the actual 22 paper you're referring to. 23 MS. THOMPSON: 24 Q Okay. We may go through some of those.</p>	<p>1 MS. THOMPSON: 2 Q Well, support -- support equals proof? 3 A Support couldn't equal proof. Proof is 4 a general term. So it's gonna be a spectrum. 5 Q 100 percent? 6 A Are you -- you know, definitive proof 7 would be definitive. 8 Q Okay. Let's take a break. 9 VIDEOGRAPHER: 10 Off the record at 10:44 a.m. 11 (OFF THE RECORD.) 12 VIDEOGRAPHER: 13 We're back on the record at 11 a.m. 14 MS. THOMPSON: 15 Q Dr. Birrer, I want to give you a series 16 of statements and have you agree or disagree or, 17 if you don't know or don't have an opinion, 18 that's fine, too. And -- and if you do have a 19 comment or explanation, you're welcome to provide 20 that, too, after you -- do you have a pen? You 21 can mark on this exhibit as we go through. This 22 is Exhibit 9. 23 (DEPOSITION EXHIBIT NUMBER 9 24 WAS MARKED FOR IDENTIFICATION.)</p>

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<p>1 MS. CURRY: 2 Can I just state an objection on the 3 record to the creation of this exhibit without 4 knowing the background of where the statements 5 are coming from. 6 MS. GARBER: 7 I don't think we're going to have 8 speaking objections here today, Miss Curry. The 9 proper objection is "Objection. Form." Do not 10 coach the witness, please. 11 MS. CURRY: 12 Miss Garber, I'm not coaching the 13 witness. 14 MS. GARBER: 15 You are coaching the witness. You know 16 you're coaching the witness. 17 MS. THOMPSON: 18 I'm asking a statement. It doesn't 19 matter where it's coming from. It's from my 20 head. 21 MR. MIZGALA: 22 Do you have extra copies of this? 23 MS. THOMPSON: 24 I did bring extra copies.</p>	<p>1 A Yeah. I would disagree with that 2 statement. 3 Q Number 2, "If 40 percent of women use 4 talc and the relative risk is 1.2, then 7 percent 5 of ovarian cancer cases would be attributable to 6 talc use or 1,577 cases a year in the USA. This 7 is not a trivial number and should not be 8 dismissed." 9 Would you agree or disagree? 10 MS. CURRY: 11 Object to the form. 12 A Disagree. 13 MS. THOMPSON: 14 Q Number 3, "Genital powder use is a 15 modifiable exposure associated with small to 16 moderate increases in risk of most histologic 17 subtypes of epithelial ovarian cancer." 18 Would you agree or disagree? 19 MS. CURRY: 20 Object to the form. 21 A Disagree. 22 I'm sorry. Go ahead. Got it? 23 Disagree. 24 MS. THOMPSON:</p>
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<p>1 MR. MIZGALA: 2 Thank you. 3 MS. THOMPSON: 4 Q So, Dr. Birrer, statement number 1, 5 "Given the number of hazard ratios reported in 6 the literature between 1.1 and" -- that should be 7 an -- "1.4 in both case-control and cohort 8 studies, it is disingenuous to state that there 9 is no evidence that talc is associated with 10 ovarian cancer." 11 Do you agree or disagree with that 12 statement? 13 MS. CURRY: 14 Object to the form. 15 A Now, you want me to write an answer 16 here? 17 MS. THOMPSON: 18 Q Yes, please. And then -- and when you 19 tell me, I'm going to put it on here, too. 20 A Yeah. Okay. In these -- the hazard 21 ratios, these are in a case-controlled cohort 22 studies. 23 Q It says in both case-controlled and 24 cohort studies.</p>	<p>1 Q Number 4, "Perineal use of talc-based, 2 not asbestiform, body powder is possibly 3 carcinogenic to humans, group 2B." 4 A Disagree. 5 MS. CURRY: 6 Object to the form. 7 MS. THOMPSON: 8 Q Number 5, "The use of perineal talcum 9 powder has been associated with a 20 to 30 10 percent increased risk of ovarian cancer, 11 although it also has been shown to vary by 12 histologic subtype." 13 MS. CURRY: 14 Object to the form. 15 MS. THOMPSON: 16 Q Agree or disagree? 17 A And this is -- like, histologic -- 18 clear cell and endometrioid? Is that what's 19 being implied here? 20 Q Yes. 21 A Disagree. 22 Q Number 6, "A lot of work has been done 23 to clarify the risk reduction of various lifestyle approaches, such as alcohol, obesity,</p>

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<p>1 cigarette smoking and talc use. Some of these 2 are subtype specific, such as endometriosis, 3 cigarette smoking, while others are general risk 4 factors. Use of talc in the genital area has 5 consistently been shown to increase the risk of 6 OC and therefore is not recommended."</p> <p>7 MS. CURRY:</p> <p>8 Object to the form.</p> <p>9 A Disagree.</p> <p>10 MS. THOMPSON:</p> <p>11 Q Number 7, "Inflammatory risk factors 12 for EOC are perineal talc exposure, endometriosis 13 and pelvic inflammatory disease."</p> <p>14 Agree or disagree?</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A So this is inclusive of all three; 18 right? Endometriosis and --</p> <p>19 MS. THOMPSON:</p> <p>20 Q Yes.</p> <p>21 A Okay.</p> <p>22 Q But if you want to disagree and 23 explain, that -- that's fine.</p> <p>24 A I would -- that's a tough one to</p>	<p>1 statement as a whole --</p> <p>2 A Yeah.</p> <p>3 Q -- but would --</p> <p>4 A Caveat.</p> <p>5 Q -- and that will be on the record that 6 you --</p> <p>7 A Okay. Parsed it.</p> <p>8 Q The ones that -- yeah.</p> <p>9 Number 9, "Talc powder use is highly 10 prevalent in the African-American community and 11 has been found to be associated with increased 12 risk of ovarian cancer, period."</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 A So I do believe the first part, that 16 it's prevalent in the African-American community. 17 The second part is not convincing to me.</p> <p>18 Is that -- can we put that on the 19 record? Disagree with the caveat, yeah.</p> <p>20 MS. THOMPSON:</p> <p>21 Q Yeah. "Most women report using 22 Johnson's baby powder or Shower to Shower."</p> <p>23 A I don't know.</p> <p>24 Q "The average age women begin using talc</p>
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<p>1 answer. I think endometriosis is a -- I don't 2 call it inflammatory. So, yeah, I would -- I 3 don't call it inflammatory, so, yeah, I would 4 disagree on this. It's too general.</p> <p>5 MS. THOMPSON:</p> <p>6 Q "Risk factors to be considered: 7 Parity, oral contraceptive use, breastfeeding, 8 tubal ligation, painful periods or endometriosis, 9 obesity or polycystic ovarian syndrome, and talc 10 use. These risk factors are concordant with 11 published epidemiologic data related to 12 reproductive factors, use of talc, tubal 13 ligation, endometriosis and polycystic ovarian 14 syndrome or obesity."</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A So parity, oral contraceptive, 18 breastfeeding, tubal ligation, endometriosis but 19 not painful periods or obesity or talc use. Is 20 that a --</p> <p>21 MS. THOMPSON:</p> <p>22 Q Okay.</p> <p>23 A -- no or --</p> <p>24 Q So -- so you would disagree with the</p>	<p>1 is 20."</p> <p>2 A Don't know that.</p> <p>3 Q "In the interest of public health, I 4 believe we should caution women against using 5 genital talcum powder," number 12.</p> <p>6 MS. CURRY:</p> <p>7 Object to the form.</p> <p>8 MS. THOMPSON:</p> <p>9 Q Agree or disagree?</p> <p>10 A I disagree.</p> <p>11 Q Number 13, "Genital powder use is a 12 lifestyle risk factor for all serous, 13 endometrioid, and clear cell histologic subtypes 14 of ovarian cancer."</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A I disagree.</p> <p>18 MS. THOMPSON:</p> <p>19 Q Number 14, "Overall, there is an 20 association between genital talc use and EOC and 21 a significant trend with increasing" -- in 22 quotations -- "talc years of use."</p> <p>23 MS. CURRY:</p> <p>24 Object to the form.</p>

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<p>1 MS. THOMPSON:</p> <p>2 Q Agree or disagree?</p> <p>3 A I'm thinking. Disagree.</p> <p>4 Q Number 15, "Talc-containing powders are hypothesized to promote cancer development by ascending the female genital tract and interacting directly with the ovarian surface epithelium, leading to local inflammation characterized by increased rates of cell division, DNA repair, oxidative stress, and elevated inflammatory cytokines."</p> <p>12 MS. CURRY:</p> <p>13 Object to the form.</p> <p>14 A This is a hypothesis; right?</p> <p>15 MS. THOMPSON:</p> <p>16 Q Yes.</p> <p>17 A I agree.</p> <p>18 Q "Following" -- number 16.</p> <p>19 A Uh-huh.</p> <p>20 Q "Following perineal application, talc particles can migrate from the vagina to the peritoneal cavity and ovaries."</p> <p>23 MS. CURRY:</p> <p>24 Object to the form.</p>	<p>1 present in the vagina, can migrate to the upper genital tract."</p> <p>3 MS. CURRY:</p> <p>4 Object to the form.</p> <p>5 MS. THOMPSON:</p> <p>6 Q Agree or disagree?</p> <p>7 MS. THOMPSON:</p> <p>8 A You want to -- do you want to define "biologic credibility"?</p> <p>10 THE COURT REPORTER:</p> <p>11 Say again?</p> <p>12 THE WITNESS:</p> <p>13 Define "biologic credibility."</p> <p>14 Sorry. I'm mumbling.</p> <p>15 THE COURT REPORTER:</p> <p>16 Uh-huh.</p> <p>17 MS. THOMPSON:</p> <p>18 Q Let's define it as evidence of a credible biologic mechanism.</p> <p>20 A I would disagree.</p> <p>21 MS. CURRY:</p> <p>22 Object to the form.</p> <p>23 MS. THOMPSON:</p> <p>24 Q Number 20, "The vagina serves as a</p>
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<p>1 A Disagree on that.</p> <p>2 MS. THOMPSON:</p> <p>3 Q Number 17, "A majority of women experience retrograde menstruation. This suggests a mechanism by which talc particles can travel through the female reproductive tract to the peritoneal cavity and ovaries."</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 MS. THOMPSON:</p> <p>11 Q Agree or disagree?</p> <p>12 A Disagree.</p> <p>13 Q Number 18, "It is possible that the passage of talc is aided by retrograde menses and that talc use during menses poses a special risk."</p> <p>17 Agree or disagree?</p> <p>18 MS. CURRY:</p> <p>19 Object to the form.</p> <p>20 A Disagree.</p> <p>21 MS. THOMPSON:</p> <p>22 Q 19, "Biologic credibility of the Talc/EOC association is enhanced by persuasive evidence that inert particles the size of talc,</p>	<p>1 portal to the internal reproductive tract.</p> <p>2 MS. CURRY:</p> <p>3 Object to the form.</p> <p>4 A Agree.</p> <p>5 MS. THOMPSON:</p> <p>6 Q 21, "The vagina is a muscloepithelial tube extending from the level of the external genitals to the cervical portion of the uterus. It is a reproductive conduit in all respects, connecting the external environment to the internal genitalia."</p> <p>12 MS. CURRY:</p> <p>13 Object to the form.</p> <p>14 A I'm not sure I understand that statement.</p> <p>16 What's the internal genitalia?</p> <p>17 MS. THOMPSON:</p> <p>18 Q The ovaries.</p> <p>19 A The ovaries. I'm putting that in here.</p> <p>20 Q And tubes. Let's say tubes and ovaries.</p> <p>22 A Okay. External.</p> <p>23 Yeah, I would agree on that.</p> <p>24 Q And, actually, I think the --</p>

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1 A Cervix.		1 A Disagree.	
2 Q I think the uterus is an internal		2 MS. THOMPSON:	
3 genitalia, too.		3 Q 27, "Talc is able to migrate through	
4 A Okay.		4 the genital tract and gain access to the ovaries	
5 Q But I agree that's somewhat --		5 because talc fibers have been detected in benign	
6 A Yeah. It's a little -- I mean, yeah.		6 and malignant ovarian tissues."	
7 Genitalia is usually external.		7 Agree or disagree?	
8 Q Yeah.		8 MS. CURRY:	
9 22, "A review of the literature	suggests that it is biologically plausible for		9 Object to the form.
10 talc particles to migrate from the vagina to the	peritoneal cavity and ovaries following perineal		10 A Disagree.
11 application."	MS. THOMPSON:		11 MS. THOMPSON:
12 MS. CURRY:	Object to the form.		12 Q 28, "There are inherent limitations
13 Object to the form.	MS. THOMPSON:		13 quantifying a dose-response due to a lack of
14 Agree or disagree?	Q 23. "Talc placed on the		14 metrics for how much talc is in an application,
15 A Disagree.	perineum may enter the vagina and ascend to the		15 how much enters the vagina, and how much reaches
16 Q "Talc" -- 23. "Talc placed on the	upper genital tract."		16 the upper genital tract where, presumably, any
17 perineum may enter the vagina and ascend to the	deleterious effect is mediated. This may account		17 for the failure to identify a dose-response in
18 upper genital tract."	many papers on talc and ovarian cancer."		18 MS. CURRY:
19 Agree or disagree?	Object to the form.		19 Object to the form.
20 MS. CURRY:	A It's a big statement. Give me a		20 A It's a big statement. Give me a
21 Object to the form.	second. I disagree with that.		21 second. I disagree with that.
22	MS. THOMPSON:		22 MS. THOMPSON:
23	Object to the form.		23
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1 A Disagree.		1 Q 29, "Tubal ligation is a strong	
2 MS. THOMPSON:		2 protective factor. One possibility for the	
3 Q 24, "The potential for particulates to	3 mechanism is blocking the transience of potential		3 materials that could impact the health of the
4 migrate from the perineum and vagina to the	4 fimbria."		4
5 peritoneal cavity is indisputable."	MS. CURRY:		5
6 MS. CURRY:	Object to the form.		6 Object to the form.
7 Object to the form.		7 A Disagree.	
8 A Disagree.		8 MS. THOMPSON:	
9 MS. THOMPSON:		9 Q Number 30, "Any material -- whether it	
10 Q "The Sjösten study" --	10 be talc, heavy metals, asbestos, whatever -- can		10
11 Do you know the Sjösten study?	11 migrate from the perineum to the ovaries through		11
12 A I do.	12 the reproductive tract. There's an anatomical		12
13 Q -- "offers compelling evidence in	13 conduit, so it's not blocked. Theoretically, it		13
14 support of the migration hypothesis."	14 could happen."		14
15 MS. CURRY:	15 Agree or disagree?		15
16 Object to the form.		16 MS. CURRY:	
17 A Disagree.		17 Object to the form.	
18 MS. THOMPSON:		18 A Disagree.	
19 Q 26, "Talc particulates from perineal	19 MS. THOMPSON:		19 Q 31, "There is an anatomic conduit from
20 application have been shown to migrate to the	20 the perineum through to the ovary, vagina,		20 cervical os, endometrium, and the fallopian tube
21 ovaries."	21 that is, in most women, an open conduit -- that		21
22 Agree or disagree?	22		22
23 MS. CURRY:	23		23
24 Object to the form.	24		24

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<p>1 is in most women an open conduit. On a theoretic 2 level, things can transit."</p> <p>3 A I would agree with that.</p> <p>4 MS. CURRY:</p> <p>5 Object to the form. Sorry.</p> <p>6 THE WITNESS:</p> <p>7 I'm sorry.</p> <p>8 MS. THOMPSON:</p> <p>9 Q 32, "Genital powder use was associated 10 with ovarian cancer risk in African-American 11 women and are consistent with localized chronic 12 inflammation in the ovary due to particulates 13 that travel through a direct transvaginal route."</p> <p>14 MS. CURRY:</p> <p>15 Object to the form.</p> <p>16 A Disagree.</p> <p>17 MS. THOMPSON:</p> <p>18 Q 33, "Biologic credibility for an 19 association would be strengthened by an animal 20 model, but an experiment capturing all of the 21 potential factors in the 'human' model would be 22 very difficult. These elements include 23 chronicity of the exposure, anatomic and 24 physiologic uniqueness of women, effects of</p>	<p>1 Oh, sorry.</p> <p>2 So the animal model, yes. The rest of 3 it, no.</p> <p>4 Q Animal model --</p> <p>5 A Would be strengthened.</p> <p>6 Q Okay. We've got in the human model --</p> <p>7 A Yeah.</p> <p>8 Q -- agree.</p> <p>9 A Okay.</p> <p>10 Q Okay. And the rest, disagree.</p> <p>11 A Yeah.</p> <p>12 Q Okay. I think that's clear, especially 13 with explanation.</p> <p>14 34, "It is plausible that perineal 15 talc, and other particulate, in parens, that 16 reaches the endometrial cavity, fallopian tubes, 17 ovaries and peritoneum, may elicit a foreign 18 body-type reaction and inflammatory response 19 that, in some exposed women, may progress to 20 epithelial cancers."</p> <p>21 MS. CURRY:</p> <p>22 Object to the form.</p> <p>23 A I disagree with that.</p> <p>24 MS. THOMPSON:</p>
<p style="text-align: center;">Page 131</p> <p>1 pregnancy and potential spread through coitus."</p> <p>2 Agree or disagree?</p> <p>3 MS. CURRY:</p> <p>4 Object to the form.</p> <p>5 A This is in relationship to talc?</p> <p>6 MS. THOMPSON:</p> <p>7 Q Yes.</p> <p>8 A Okay.</p> <p>9 Q Talc and ovarian cancer.</p> <p>10 A Yeah, yeah. Okay.</p> <p>11 It's a two-part issue, unfortunately.</p> <p>12 I mean, I think it would be strengthened by an 13 animal model.</p> <p>14 Q And if you -- if you'd -- if you'd like 15 to divide that up into two sections, that would 16 be -- that's fine.</p> <p>17 A Okay. Well, I -- okay. That's --</p> <p>18 yeah. I think -- I think it would be 19 strengthened by an animal model.</p> <p>20 Q Okay. So --</p> <p>21 A "Experiment capturing all the potential 22 would be difficult."</p> <p>23 I don't agree with that, the second 24 part. Can I do that and split it a little bit?</p>	<p style="text-align: center;">Page 133</p> <p>1 Q 35, "Epidemiologic evidence implicates 2 chronic inflammation as a central mechanism in 3 the pathogenesis of ovarian cancer, the most 4 lethal gynecologic cancer among women in the 5 United States."</p> <p>6 MS. CURRY:</p> <p>7 Object to the form.</p> <p>8 MS. THOMPSON:</p> <p>9 Q And I'll assume that you don't agree 10 with the last --</p> <p>11 A Right. Most lethal?</p> <p>12 Q -- part of that? But the first part?</p> <p>13 A I would disagree with this. Yeah.</p> <p>14 Q 36, "Findings on talc and endometriosis 15 are consistent with previous findings and are 16 compatible with a hypothesis that these factors 17 increase the risk of ovarian cancer and that 18 inflammation -- and that inflammation may be a 19 common pathway."</p> <p>20 MS. CURRY:</p> <p>21 Object to the form.</p> <p>22 A Disagree.</p> <p>23 MS. THOMPSON:</p> <p>24 Q 37, "Chron" --</p>

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	<p>1 A 37. Right.</p> <p>2 Q "Chronic inflammation has been proposed 3 as the possible causal mechanism that explains 4 the observed association between certain risk 5 factors, such as use of talcum powder (talc) in 6 the pelvic region and epithelial ovarian cancer."</p> <p>7 MS. CURRY: 8 Object to the form.</p> <p>9 A That's been proposed; right? I would 10 agree.</p> <p>11 MS. THOMPSON: 12 Q And you would disagree that that is a 13 possible cause of mechanism, I assume. 14 A Correct. 15 Q 38, "Talc particles can induce an 16 inflammatory response in vivo, which may be 17 important in ovarian cancer risk. Normal ovarian 18 cells treated with talc are more likely to 19 undergo cell proliferation and neoplastic 20 transformation, and cellular generation of 21 reactive oxygen species increases with increasing 22 exposure to talc."</p> <p>23 MS. CURRY: 24 Object to the form.</p>	<p>1 inflammation and an increased risk of ovarian 2 cancer. Other specific inflammatory factors have 3 also been associated with ovarian cancer."</p> <p>4 MS. CURRY: 5 Object to the form.</p> <p>6 A I agree on that.</p> <p>7 MS. THOMPSON: 8 Q 42, "The patency of the female tract 9 and the nature of ovarian cancer as a surface 10 epithelial (mesothelial lesion) make the ovary a 11 target for foreign body carcinogenesis."</p> <p>12 MS. CURRY: 13 Object to the form.</p> <p>14 MS. THOMPSON: 15 Q Agree or disagree? 16 A Disagree. 17 Q 43, "Inflammation has been suggested to 18 be a major factor leading to epithelial ovarian 19 cancer. For example, epidemiologic data have 20 shown that asbestos and talc exposure increased 21 ovarian cancer risk."</p> <p>22 MS. CURRY: 23 Object to the form. 24 A Disagree.</p>
	<p>1 A I disagree with that.</p> <p>2 MS. THOMPSON: 3 Q 39, "A growing body of epidemiologic 4 evidence suggests that factors causing epithelial 5 inflammation are involved in ovarian 6 carcinogenesis. Such factors include asbestos 7 and talc exposures, endometriosis and pelvic 8 inflammatory disease (PID)."</p> <p>9 MS. CURRY: 10 Object to the form. 11 A Disagree with that.</p> <p>12 MS. THOMPSON: 13 Q 40, "Direct induction of inflammation 14 as a result of endometriosis, talc, and asbestos 15 exposure, and PID, as well as ovulation itself, 16 may act to promote ovarian tumorigenesis." 17 Agree or disagree?</p> <p>18 MS. CURRY: 19 Object to the form. 20 A Disagree.</p> <p>21 MS. THOMPSON: 22 Q 41, regarding Inflammation. "Studies 23 of the inflammatory marker C-reactive protein 24 suggests a possible association between</p>	<p>1 MS. THOMPSON: 2 Q 44, "Studies have found" -- "also found 3 that endometrio--" -- 4 Let's leave out the "also," since I 5 don't know what that refers to. 6 "Studies have found that endometriosis, 7 pelvic inflammatory disease, and mumps viral 8 infection are positively associated with ovarian 9 cancer risk. In contrast, tubal ligations and 10 hysterectomies, which are thought to reduce the 11 exposure of the OSE to environmental inflammation 12 initiators have been shown to reduce the risk of 13 ovarian cancer."</p> <p>14 MS. CURRY: 15 Object to the form. 16 A I agree on that.</p> <p>17 MS. THOMPSON: 18 Q 45, "It has been noted that the 19 ovulatory process itself resembles an 20 inflammatory reaction, with leukocytic 21 infiltration, the release of nitric oxide and 22 inflammatory cytokines, basal dilation, DNA 23 repair and tissue remodeling."</p> <p>24 MS. CURRY:</p>

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<p>1 Object to the form.</p> <p>2 MS THOMPSON:</p> <p>3 Q Agree or disagree?</p> <p>4 A I would agree on that.</p> <p>5 Q 46, "The latency period of more advanced, malignant epithelial ovarian cancer could be estimated to be approximately 30 to 40 years."</p> <p>9 MS. CURRY:</p> <p>10 Form.</p> <p>11 A I don't know that. Sorry. I don't know.</p> <p>13 MS. THOMPSON:</p> <p>14 Q "If the magnitude of the association is to be estimated with precision, it is important that consortia are developed and expanded in order to generate the appropriate sample size."</p> <p>18 And this is in regard to talcum powder in association with ovarian cancer.</p> <p>20 MS. CURRY:</p> <p>21 Object to the form.</p> <p>22 A Don't know.</p> <p>23 MS. THOMPSON:</p> <p>24 Q 48, "Neither prospective study" --</p>	<p>1 Q 51, "For baby powder users, it is habit that developed at one point and stays regularly."</p> <p>3 MS. CURRY:</p> <p>4 Object to the form.</p> <p>5 A Don't know.</p> <p>6 MS. THOMPSON:</p> <p>7 Q 52, "In order to achieve statistical significance in a prospective study, we need a much larger cohort. For example, we will need to study upwards of 200,000 women for ten years."</p> <p>11 MS. CURRY:</p> <p>12 Object to the form.</p> <p>13 A I disagree.</p> <p>14 MS. THOMPSON:</p> <p>15 Q You disagree.</p> <p>16 53, "Given inherent limitation of cohort studies, it is not surprising that we have not been able to confirm the case-control studies with prospective studies, but this does not mean that the case-control studies were wrong."</p> <p>21 MS. CURRY:</p> <p>22 Object to the form.</p> <p>23 A Disagree.</p> <p>24 MS. THOMPSON:</p>
<p style="text-align: center;">Page 139</p> <p>1 meaning Gertig or Houghton -- "confirmed the association of talc use and ovarian cancer raised by the case-control studies, but neither study was powered to detect a risk of 1.2 and therefore, we cannot exclude the possibility."</p> <p>6 Agree or disagree?</p> <p>7 MS. CURRY:</p> <p>8 Object to the form.</p> <p>9 A Disagree.</p> <p>10 MS. THOMPSON:</p> <p>11 Q 49, "An odds ratio of 1.2 or 1.3 has no meaningful clinical impact on a patient."</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 A Don't know.</p> <p>16 MS. THOMPSON:</p> <p>17 Q "There are design studies with" -- sorry.</p> <p>19 50, "There are design issues with every study, both case-controls and cohort studies."</p> <p>21 MS. CURRY:</p> <p>22 Object to the form.</p> <p>23 A I would agree with that.</p> <p>24 MS. THOMPSON:</p>	<p style="text-align: center;">Page 141</p> <p>1 Q Agree or disagree?</p> <p>2 A Disagree.</p> <p>3 Q 54, "It is unlikely that the association between talc and ovarian cancer is due to confounding, and so it is fair to say that if there is a statistically robust relationship between talc use and ovarian cancer" -- sorry. I'm gonna start all over.</p> <p>9 "It is unlikely that the association between talc and ovarian cancer is due to confounding, and so it is fair to say that if there is a statistically robust relationship between talc use and ovarian cancer, it is likely to be causal (albeit with intermediate factors such as inflammation)."</p> <p>16 Agree or disagree?</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 A Disagree.</p> <p>20 MS. THOMPSON:</p> <p>21 Q 55, "Among many epidemiologic variables, no confounders for the association -- for the association were identified."</p> <p>24 MS. CURRY:</p>

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<p>1 Object to the form.</p> <p>2 A No opinion.</p> <p>3 MS. THOMPSON:</p> <p>4 Q 56, "There is a consistent association 5 between talc and ovarian cancer that appears 6 unlikely to be explained by recall or 7 confounding."</p> <p>8 Agree or disagree?</p> <p>9 MS. CURRY:</p> <p>10 Object to the form.</p> <p>11 A Disagree.</p> <p>12 MS. THOMPSON:</p> <p>13 Q 57, "The meta-analyses of the available 14 human studies in the peer-reviewed literature 15 indicate a consistent and statistically 16 significant positive association between perineal 17 exposure to talc and ovarian cancer."</p> <p>18 MS. CURRY:</p> <p>19 Object to the form.</p> <p>20 A Disagree.</p> <p>21 MS. THOMPSON:</p> <p>22 Q You disagree.</p> <p>23 58, "In studies where the exposure is 24 simple (e.g., never versus ever use), recall bias</p>	<p>1 Object to the form.</p> <p>2 A I agree on that.</p> <p>3 MS. THOMPSON:</p> <p>4 Q 61, "The gold standard for translating 5 epidemiologic case-controlled or cohort 6 observational studies into a clinical meaningful 7 data relies on laboratory-derived experiments in 8 vitro or in vivo."</p> <p>9 MS. CURRY:</p> <p>10 Object to the form.</p> <p>11 A I disagree with that.</p> <p>12 MS. THOMPSON:</p> <p>13 Q On what basis?</p> <p>14 A The -- it depends upon the 15 epidemiologic date that that we're talking about.</p> <p>16 Q In other words, if the epidemiologic 17 data isn't strong enough, in your opinion, then 18 doing in vitro or in vivo studies don't provide 19 clinically meaningful data? Is that --</p> <p>20 MS. CURRY:</p> <p>21 Object to the form.</p> <p>22 A It's actually -- it's actually the 23 other way around. So I think if it's a weak 24 association, then the laboratory data becomes</p>
<p style="text-align: center;">Page 143</p> <p>1 is unlikely to be an important source of bias."</p> <p>2 Agree or disagree?</p> <p>3 MS. CURRY:</p> <p>4 Object to the form.</p> <p>5 A No opinion.</p> <p>6 MS. THOMPSON:</p> <p>7 Q Is that an issue that you would be 8 inclined to -- to ask an epidemiologist?</p> <p>9 MS. CURRY:</p> <p>10 Object to the form.</p> <p>11 A I'd like to see the -- I'd like to see 12 the study that it's based on.</p> <p>13 MS. THOMPSON:</p> <p>14 Q Okay. 59, "Available data are 15 indicative of a causal effect." And again, 16 referring to talc and ovarian cancer.</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 A Disagree.</p> <p>20 MS. THOMPSON:</p> <p>21 Q 60, "The data supporting the 22 association of talc to the development of ovarian 23 cancer is completely inconclusive."</p> <p>24 MS. CURRY:</p>	<p style="text-align: center;">Page 145</p> <p>1 that much more important for biologic 2 plausibility.</p> <p>3 If it has -- you know, if it's chimney 4 sweeps or lung cancer with smoking, then that's 5 clinically meaningful. Those effects are huge. 6 That's what I'm -- I'm not associating this just 7 with the talc statement. Is it a talc statement?</p> <p>8 MS. THOMPSON:</p> <p>9 Q Uh-huh. I just want to make -- just 10 want to make sure that I understand the -- the 11 reason for your disagreement. But if you feel 12 like it's explained, I'm good.</p> <p>13 A And again, I -- it's sort of the broad 14 view that if -- if the -- if the epidemiologic 15 case control and cohort studies are so powerful 16 with a huge effect, then the biologic experiments 17 and lab become less important.</p> <p>18 The other way around, which is really 19 what we're dealing with with talc where the 20 epidemiologic data I think is not compelling, the 21 biologic plausibility becomes more important. 22 And it sort of gets back into the Bradford Hill.</p> <p>23 Q Okay. So it's sort of inversely 24 proportional in terms of the --</p>

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1	A	In terms of value.	1 Q Are you familiar with the term -- and I
2	Q	-- the importance of it?	2 believe this is more in the toxicological
3	A	Yeah.	3 literature -- of a complete carcinogen?
4	Q	Okay. Got it.	4 A I would --
5		62, "Mineral talc occurs naturally in a	5 Q Does that have a meaning to you?
6		platy, flat form, but may also occur as	6 A Yeah. I've seen that described.
7		asbestiform fibers, which describes its physical	7 Frankly, I can only -- I can only sort of guess
8		form and does not imply the presence of asbestos.	8 what they mean by that. My guess is a complete
9		The purer forms, approximately 90 percent mineral	9 carcinogen, putting out there for the discussion
10		talc, are used for" -- oops -- "are used for	10 between you and me is what I'm describing as the
11		cosmetic and hygiene products, including baby	11 classic initiation molecule.
12		powders and feminine hygiene products."	12 Q IARC describes -- do I have it? Would
13		MS. CURRY:	13 you look at Exhibit 6, which is the IARC? I just
14		Object to the form.	14 wanted to look at their definition of
15		MS. THOMPSON:	15 carcinogenesis and see whether you would agree
16	Q	Agree or disagree or no opinion?	16 with it or not.
17	A	No opinion.	17 A Is it in the preamble?
18	Q	That's it. I'll think of some new	18 Q It's in the preamble. And if I can't
19		questions.	19 find it, we may come back to that later.
20	A	I feel like I just took my boards.	20 Because I can't remember where it is.
21	Q	Dr. Birrer, how do you define a	21 Let's come back to that.
22		carcinogen?	22 A It's a big preamble.
23	A	That's an agent or substance which	23 Q Lots of methodology.
24		causes or induces cancer.	24 Are you familiar with the Hanahan paper
		Page 147	Page 149
1	Q	Do you include effect on the promotion	1 from 2011 "Hallmarks of Cancer"?
2		and progression of cancer as well in a -- when	2 A It's a global sort of review. Yes.
3		you're considering carcinogenicity?	3 Q A big review --
4		MS. CURRY:	4 A Big.
5		Object to the form.	5 Q -- article?
6	A	So historically -- and there's been a	6 A Is it --
7		lot of work on this for decades -- carcinogens	7 Q Do you know -- do you know Dr. Hanahan
8		have been -- usually been associated with	8 or know of Dr. Hanahan?
9		initiation. So this is a substance -- just to	9 A I know of him.
10		you an example. Paint it on to a mouse skin, and	10 Q And it's Hanahan and Weinberg?
11		you develop tumors above -- statistically	11 A Weinberg, yeah. Yeah.
12		significantly above background.	12 Q Let me go ahead and mark that.
13		Tumor promoters don't do that. But	13 A Okay.
14		when you combine the tumor promoter with the	14 (DEPOSITION EXHIBIT NUMBER 10
15		carcinogen, instead of getting the 10 tumors, now	15 WAS MARKED FOR IDENTIFICATION.)
16		you get a hundred. So promotion is a little bit	16 MS. THOMPSON:
17		different. That's the historic perspective.	17 Make sure those don't have my markings
18		You know, we've come a long way since	18 on it.
19		then, and I think it's gotten even more complex,	19 A It would be easier for me if the
20		that there are tumor promoters that work by	20 markings were there.
21		transcriptional factors. So that's not genetic	21 MS. THOMPSON:
22		changes in the tumor, in the cells. Carcinogens	22 Q Exhibit 10. And you agree that this
23		usually work that way, where you're getting a	23 article describes the hallmarks of cancer in a
24		permanent genetic change.	24 general sense; right?

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<p>1 A Correct.</p> <p>2 Q And it's a review article in Cell. Are</p> <p>3 you familiar with that journal?</p> <p>4 A I am.</p> <p>5 Q Have you published in that journal?</p> <p>6 Probably.</p> <p>7 A I wished I had published more in that</p> <p>8 journal. Yeah.</p> <p>9 Q And it's -- the title of the article is</p> <p>10 "The Hallmarks of Cancer: The Next Generation."</p> <p>11 But in the top right hand, it says, "Leading edge</p> <p>12 review." So that would be a review article for a</p> <p>13 general audience. Would you agree?</p> <p>14 A Yes. General audience of scientists,</p> <p>15 yeah. Because it's pretty sophisticated.</p> <p>16 Q Agree.</p> <p>17 And it describes the hallmarks of</p> <p>18 cancer generally. These do not specifically</p> <p>19 apply to ovarian cancer in -- in the</p> <p>20 introduction. I'm starting on the third</p> <p>21 sentence. "They include sustaining proliferative</p> <p>22 signaling, evading growth suppressors, resisting</p> <p>23 cell death, enabling replicative" --</p> <p>24 A Third line of -- you're in the abstract</p>	<p>1 Characteristics."</p> <p>2 And it says, the first sentence, "An</p> <p>3 increasing body of research suggests that two</p> <p>4 additional hallmarks of cancer are involved in</p> <p>5 the pathogenesis of some and perhaps all</p> <p>6 cancers."</p> <p>7 I'm gonna skip down to the -- to the</p> <p>8 last sentence in that description.</p> <p>9 "Inflammation" --</p> <p>10 A You're in the figure legend?</p> <p>11 Q In the figure legend.</p> <p>12 "Inflammation by innate immune cells</p> <p>13 designed to fight infections and heal wounds can</p> <p>14 instead result in their inadvertent support of</p> <p>15 multiple hallmark capabilities, thereby</p> <p>16 manifesting the now widely appreciated tumor</p> <p>17 promoting consequences of inflammatory</p> <p>18 responses."</p> <p>19 Would you agree with that statement, in</p> <p>20 a general sense?</p> <p>21 A Yes.</p> <p>22 MS. CURRY:</p> <p>23 Object to the form.</p> <p>24 A Sorry.</p>
<p style="text-align: center;">Page 151</p> <p>1 or in the introduction?</p> <p>2 Q I'm in the -- sorry. I'm in the</p> <p>3 abstract.</p> <p>4 A Okay.</p> <p>5 Q It sort of seemed more like an</p> <p>6 introduction than an abstract to me. So starting</p> <p>7 again. Talking about the hallmarks described in</p> <p>8 this paper, "They include sustaining</p> <p>9 proliferative signalling, evading growth</p> <p>10 suppressors, resisting cell death, enabling</p> <p>11 replicative immortality, enduing angiogenesis,</p> <p>12 and activating invasin and metathesis.</p> <p>13 "Underlining these hallmarks are genome</p> <p>14 instability which generates the genetic diversity</p> <p>15 that expedites their acquisition and</p> <p>16 inflammation, which fosters multiple hallmark</p> <p>17 functions."</p> <p>18 Would you agree with that statement</p> <p>19 from this article?</p> <p>20 A I think as a general statement, yes.</p> <p>21 Q And the article, as you described, is</p> <p>22 quite technical and -- and goes on for a while.</p> <p>23 I'm looking at the Figure 3 on page 658. And the</p> <p>24 heading is "Emerging Hallmarks and Enabling</p>	<p style="text-align: center;">Page 153</p> <p>1 MS. THOMPSON:</p> <p>2 Q Are you familiar with Dr. Balkwill?</p> <p>3 A We're done with this?</p> <p>4 Q We're done with that.</p> <p>5 A Fran? Fran Balkwill? Yes.</p> <p>6 Q And I believe you published with</p> <p>7 Dr. Balkwill?</p> <p>8 A I believe we're on two. I can't</p> <p>9 remember.</p> <p>10 Q And she is a well-renowned cancer</p> <p>11 biologist. Would you agree?</p> <p>12 A I would agree.</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 (DEPOSITION EXHIBIT NUMBER 11</p> <p>16 WAS MARKED FOR IDENTIFICATION.)</p> <p>17 MS. THOMPSON:</p> <p>18 Q I'm gonna mark as Exhibit 11 an article</p> <p>19 written by Dr. Balkwill.</p> <p>20 Have you seen this article, Dr. Birrer?</p> <p>21 A I'm actually not familiar with this.</p> <p>22 But I know Fran's work pretty well.</p> <p>23 Q Okay. Well, let's just --</p> <p>24 A Yeah.</p>

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<p>1 Q -- look through it. And this is also a 2 review article.</p> <p>3 A Uh-huh.</p> <p>4 Q And -- and this article is in -- is in 5 The Lancet. Correct?</p> <p>6 A Correct.</p> <p>7 Q And is -- we've already mentioned that 8 Dr. Balkwill is well regarded.</p> <p>9 Is The Lancet a well-regarded journal?</p> <p>10 A Yes.</p> <p>11 MS. CURRY: 12 Object to the form.</p> <p>13 MS. THOMPSON: 14 Q Is it one of the most respected 15 journals, would you say?</p> <p>16 MS. CURRY: 17 Object to the form.</p> <p>18 A It's not as good as Cell.</p> <p>19 MS. THOMPSON: 20 Q Oh. I won't tell them you said that. 21 But, generally -- generally speaking --</p> <p>22 A Yes.</p> <p>23 Q -- physicians and scientists would 24 recognize The Lancet?</p>	<p>1 progression, and immunosuppression than they are 2 to mount an effective host antitumor response.</p> <p>3 Moreover cancer suscep- -- susceptibility and 4 severity may be associated with functional 5 polymorphisms of inflammatory cytokine genes, and 6 deletion or inhibition of inflammatory cytokines, 7 inhibits development of experimental cancer.</p> <p>8 "If genetic damage is the 'match that 9 lights the fire' of cancer, some types of 10 inflammation may provide the 'fuel that feeds the 11 flames.'"</p> <p>12 That was a long passage, but do you 13 generally agree with the statement by 14 Dr. Balkwill?</p> <p>15 MS. CURRY: 16 Object to the form.</p> <p>17 A I do.</p> <p>18 MS. THOMPSON: 19 Q And then look down on that same page to 20 panel 1.</p> <p>21 A Uh-huh.</p> <p>22 Q And the title of that panel, for lack 23 of better word, is "Some Associations Between 24 Inflammation and Cancer Risk." Right?</p>
<p style="text-align: center;">Page 155</p> <p>1 A It's well read -- it's well read and 2 it's -- it has a substantial impact factor.</p> <p>3 Q And we don't know in this situation 4 whether Dr. Balkwill -- do you know 5 Dr. Mantovani, the second author on this paper?</p> <p>6 A No. I don't recognize him.</p> <p>7 Q We don't know whether this article was 8 invited or submitted, but, regardless, certainly 9 the readers of Lancet would look to Dr. Balkwill 10 as being an expert to discuss inflammation in 11 cancer; correct?</p> <p>12 MS. CURRY: 13 Object to the form.</p> <p>14 A Correct.</p> <p>15 MS. THOMPSON: 16 Q So reading in -- in the abstract, which 17 looks like an introduction to me again, but 18 reading the abstract, "This article reviews" -- 19 second line -- "This article reviews the links 20 between cancer and inflammation and discusses the 21 implications of these links for cancer prevention 22 and treatment. We suggest that the inflammatory 23 cells and cytokines found in tumors are more 24 likely to contribute to tumor growth,</p>	<p style="text-align: center;">Page 157</p> <p>1 A 901. Got it.</p> <p>2 Q And under "Malignancy," it lists 3 various types of cancer in which there's 4 association between inflammation and cancer risk. 5 Correct?</p> <p>6 A Correct.</p> <p>7 Q And one of them -- one of them is 8 ovarian; right?</p> <p>9 A I see it.</p> <p>10 Q And in the -- under the inflammatory 11 stimulus/condition, it lists pelvic inflammatory 12 disease, talc, tissue remodeling.</p> <p>13 Do you agree that Dr. Balkwill, at 14 least in 2001, believed that talc was an 15 inflammatory stimulus and condition for the 16 association with ovarian cancer?</p> <p>17 MS. CURRY: 18 Object to the form.</p> <p>19 A Yeah. So, again, this is a -- a bit of 20 a recurring theme in the sense that I don't know 21 if Fran -- I haven't talked to her about this 22 review. I don't know if Fran believed that and 23 got it wrong or, more likely, this is a review 24 article. So you include everything, even though</p>

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<p>1 she may not feel really strongly about that. So 2 it's a little hard to tell. 3 MS. THOMPSON: 4 Q But you would agree that both -- both 5 Dr. Balkwill and The Lancet would not include 6 something in a review article for which there was 7 no evidence? 8 MS. CURRY: 9 Object to the form. 10 A Again, it depends on how they're 11 proposing it; that there has been -- there has -- 12 there have been reports associating PID, talc -- 13 I don't know what tissue remodeling is, although 14 that is probably the most reasonable -- but PID 15 and talc as associated with a risk for ovarian 16 cancer. That's a true statement. I don't -- and 17 the reason we're here today is because I reviewed 18 that literature and I don't believe the 19 conclusion. 20 But you could put it into review. 21 That's -- that's the nature of a review article. 22 We all put things in that we feel the reader 23 needs to see to get a full understanding of 24 science, but we don't necessarily -- we're not</p>	<p>1 them to say, okay, this has been studied 2 epidemiologically and in other situations. So I 3 think -- I think that's what you're grappling 4 with. It's a review article. So these things 5 show up. 6 Q Okay. So -- so there are two 7 possibilities -- 8 A Uh-huh. 9 Q -- it sounds like. Either Dr. Balkwill 10 got it wrong -- 11 A Uh-huh. 12 Q -- or because this was a review 13 article, she was reporting evidence that was in 14 the literature that she felt that readers of this 15 article should be aware of. 16 A Correct. Don't tell her I said the 17 former. 18 MS. CURRY: 19 Object to the form of the question. 20 MS. THOMPSON: 21 Q Okay. I -- I -- I will do that for 22 you, Dr. Birrer. 23 A Uh-huh. 24 Q And -- and this paper is not recent,</p>
<p>1 convinced. 2 MS. THOMPSON: 3 Q Well, but -- but back to my question, 4 which I think was Dr. Balkwill and The Lancet 5 would not have put this in with no evidence. 6 MS. CURRY: 7 Object to the form. 8 A I don't agree with that. 9 MS. THOMPSON: 10 Q You think they would put something in 11 that they did not believe there was any evidence 12 to support? 13 MS. CURRY: 14 Object to the form. 15 A Again, it depends on how you define 16 that. So when you say "no evidence," you mean no 17 epidemiologic studies that have ever shown an 18 association. We know that's not true. There 19 have been some. So there is some evidence. It's 20 the totality of the evidence that I don't 21 believe. 22 MS. THOMPSON: 23 Q Okay. 24 A But it would not be unreasonable for</p>	<p>1 you will agree? 2 A 2010? 3 Q 2001. 4 A 2001. Uh-huh. Yeah. Okay. 5 Q Are you aware of anything that 6 Johnson & Johnson did in 2001 to address this 7 idea of Dr. Balkwill and others, including 8 Dr. Ness, that talc may be causing ovarian cancer 9 through an inflammatory process? 10 MS. CURRY: 11 Object to the form. 12 A In 2000 -- in 2001? 13 MS. THOMPSON: 14 Q Right. 15 Did Johnson & Johnson respond to what 16 at least is reported as being in the literature 17 in Lancet? 18 MS. CURRY: 19 Object to the form. 20 A I'm not aware of that. 21 MS. THOMPSON: 22 Q I'm gonna mark as Exhibit 13 -- 23 MS. EVERETT: 24 12.</p>

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	<p>1 MS. THOMPSON:</p> <p>2 Q Oh, there it is.</p> <p>3 (DEPOSITION EXHIBIT NUMBER 12</p> <p>4 WAS MARKED FOR IDENTIFICATION.)</p> <p>5 MS. THOMPSON:</p> <p>6 Q Exhibit 12 is going to be another</p> <p>7 article -- another review article by Dr. Reuter</p> <p>8 and authors. Oh, we need to -- sorry. Make sure</p> <p>9 that's not my copy.</p> <p>10 A This is mine?</p> <p>11 Q That's yours, yeah.</p> <p>12 Are you familiar with the journal of</p> <p>13 Free Radical Biology in Medicine?</p> <p>14 A I am familiar. Not something I publish</p> <p>15 in much.</p> <p>16 Q And probably doesn't have quite the</p> <p>17 reputation of The Lancet or Cell?</p> <p>18 A I don't think so.</p> <p>19 Q But regardless, it's peer-reviewed.</p> <p>20 A Uh-huh.</p> <p>21 Q Are you familiar with any of these</p> <p>22 authors?</p> <p>23 A Not firsthand. Aggarwal I may have</p> <p>24 heard about, but not, firsthand, no.</p>	<p>1 A Where are you now?</p> <p>2 Q I'm turning to page 2, 1604 in the</p> <p>3 introduction section.</p> <p>4 A Uh-huh.</p> <p>5 Q The second paragraph reads "Under a</p> <p>6 sustained environmental stress, ROS -- R-O-S --</p> <p>7 are produced over a long time, and thus</p> <p>8 significant damage may occur to cell structure</p> <p>9 and functions and may induce somatic mutations</p> <p>10 and neoplastic transformation.</p> <p>11 "Indeed, cancer initiation and</p> <p>12 progression have been linked to oxidative stress</p> <p>13 by increasing DNA mutations or inducing DNA</p> <p>14 damage, genome instability, and cell</p> <p>15 proliferation."</p> <p>16 Would you agree with that sentence in a</p> <p>17 general sense?</p> <p>18 MS. CURRY:</p> <p>19 Object to the form.</p> <p>20 A I'm just looking at the references.</p> <p>21 MS. THOMPSON:</p> <p>22 Q And take a moment if you need to do</p> <p>23 that.</p> <p>24 A Sure.</p>
	<p>1 Q And reading -- and the title of this</p> <p>2 review article is "Oxidative stress,</p> <p>3 inflammation, and cancer. How are they linked?"</p> <p>4 Right?</p> <p>5 A Correct.</p> <p>6 Q Reading in the abstract, the last</p> <p>7 couple of sentences starting with "How oxidative</p> <p>8 stress activates inflammatory pathways leading to</p> <p>9 a transformation of a normal cell to tumor cell,</p> <p>10 tumor cell survival, proliferation,</p> <p>11 chemoresistance, radioresistance, invasion,</p> <p>12 angiogenesis, and stem cell survival is the focus</p> <p>13 of this review. Overall, observations to date</p> <p>14 suggest that oxidative stress, chronic</p> <p>15 inflammation, and cancer are closely linked."</p> <p>16 Would you agree with that statement?</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 A Yes.</p> <p>20 MS. THOMPSON:</p> <p>21 Q In a general sense, in a review</p> <p>22 article?</p> <p>23 A Correct.</p> <p>24 Q And --</p>	<p>1 I think as a general statement, I</p> <p>2 wouldn't -- I would not disagree with that. I</p> <p>3 think that's -- yeah.</p> <p>4 Q Sorry.</p> <p>5 A Go ahead.</p> <p>6 Q And this article was published in 2010;</p> <p>7 correct?</p> <p>8 A Correct.</p> <p>9 Q And looking at Table 2, a partial list</p> <p>10 of cancers that have been linked to reactive</p> <p>11 oxygen species, and under that list is ovarian</p> <p>12 cancer.</p> <p>13 Would you agree that in 2010 ovarian</p> <p>14 cancer had been linked to reactive oxygen</p> <p>15 species?</p> <p>16 MS. CURRY:</p> <p>17 Object to the form.</p> <p>18 A Yeah. This was a little more</p> <p>19 complicated in the sense I'm not sure why every</p> <p>20 case was not listed because reactive oxygen</p> <p>21 species are present in essentially every cell in</p> <p>22 the body. So it's a -- it's an odd table in that</p> <p>23 it's a subset and then -- it's sort of implying</p> <p>reactive oxygen species are not important in</p>

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<p>1 other cancers.</p> <p>2 And, then, too, what they reference is</p> <p>3 51, which is a really odd reference. "Loss of</p> <p>4 Mkp3 mediated by oxidative stress enhances tumor</p> <p>5 genicity and chemoresistance of ovarian cancer</p> <p>6 cells."</p> <p>7 Hardly a paper -- I mean, I'm</p> <p>8 extrapolating the title. Hardly a paper that</p> <p>9 would say that reactive oxygen species is</p> <p>10 critical to the development of ovarian cancer.</p> <p>11 That's chemoresistance. That's -- that's at the</p> <p>12 end of natural history, so...</p> <p>13 MS. THOMPSON:</p> <p>14 Q But at least the authors in this</p> <p>15 peer-reviewed review article thought appropriate</p> <p>16 to list ovarian cancer under one of the cancers</p> <p>17 that have been linked to reactive oxygen species;</p> <p>18 right?</p> <p>19 A It's there.</p> <p>20 (DEPOSITION EXHIBIT NUMBER 13</p> <p>21 WAS MARKED FOR IDENTIFICATION.)</p> <p>22 MS. THOMPSON:</p> <p>23 Q I'm marking as Exhibit 13 another</p> <p>24 review article from Lancet. This one, a little</p>	<p>1 Object to the form.</p> <p>2 A Oza and Vergote are -- Vergote is a</p> <p>3 surgeon and very much clinical. I don't think he</p> <p>4 does any work in the lab. Oza is developmental</p> <p>5 therapeutics clinical. Charlie is the scientist</p> <p>6 here.</p> <p>7 MS. THOMPSON:</p> <p>8 Q Okay. And I think --</p> <p>9 A Yeah.</p> <p>10 Q -- at least with this review article,</p> <p>11 it was meant to address --</p> <p>12 A Everything.</p> <p>13 Q -- all -- all aspects --</p> <p>14 A Right.</p> <p>15 Q -- from my reading of it.</p> <p>16 A And I think Stephanie works for Amit, I</p> <p>17 think.</p> <p>18 Q So these are well-regarded --</p> <p>19 A Uh-huh.</p> <p>20 Q -- scientists and experts in ovarian</p> <p>21 cancer. You would agree?</p> <p>22 MS. CURRY:</p> <p>23 Q Object to the form.</p> <p>24 A Yes.</p>
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<p>1 more current.</p> <p>2 Have you seen this article, Dr. Birrer?</p> <p>3 A I know the -- I know the authors, but I</p> <p>4 haven't actually --</p> <p>5 Q Oh. Did I give you a highlighted --</p> <p>6 A I -- I don't think so.</p> <p>7 Q Okay.</p> <p>8 A It would be helpful if it was</p> <p>9 highlighted.</p> <p>10 Q It would be helpful to me also.</p> <p>11 That's okay.</p> <p>12 And, in fact, these -- I think three of</p> <p>13 the four authors you have published with. Does</p> <p>14 that sound right?</p> <p>15 A Ignace, Charlie, Amit, I know all of</p> <p>16 them. I don't know Stephanie.</p> <p>17 Q I think that was the one that I did not</p> <p>18 see on -- on your CV as one of your coauthors.</p> <p>19 And this review article -- and you</p> <p>20 would assume that -- well, we don't have to</p> <p>21 assume -- are Dr. Gourley, Dr. Vergote and</p> <p>22 Dr. Oza considered experts in the field of</p> <p>23 epithelial ovarian cancer?</p> <p>24 MS. CURRY:</p>	<p>1 MS. THOMPSON:</p> <p>2 Q And this is a review article, as we</p> <p>3 said, just published in Lancet within -- March</p> <p>4 23rd, so within the last week.</p> <p>5 Q Have you seen this article?</p> <p>6 A This one?</p> <p>7 Q Yes.</p> <p>8 A No. Just the last week.</p> <p>9 Q Let's look in the first section,</p> <p>10 Epidemiology and Risk Factors. And the last</p> <p>11 sentence, "Risk factors for EOC include the</p> <p>12 number of lifetime of ovulations (absence of</p> <p>13 pregnancy), early age of menarche and late age at</p> <p>14 menopause, family history of EOC, smoking, benign</p> <p>15 gynecological conditions, including</p> <p>16 endometriosis -- endometriosis, polycystic ovary</p> <p>17 disease and pelvic inflammatory disease, and</p> <p>18 potentially use of talcum powder."</p> <p>19 Q Would you agree that at least the</p> <p>20 authors thought that the use of talcum powder is</p> <p>21 potentially a risk factor for EOC?</p> <p>22 MS. CURRY:</p> <p>23 Q Object to the form.</p> <p>24 A And, again, this is a review. So I</p>

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<p>1 think they're trying to be inclusive. And I 2 don't actually know that any of them believe 3 that. 4 MS. THOMPSON: 5 Q So would -- would they -- would they 6 have -- would it be the two options again, either 7 they're wrong -- 8 A (Nods affirmatively.) 9 Q -- or that they're just reporting on 10 what the literature states? 11 A (Nods affirmatively.) 12 MS. CURRY: 13 Object to the form. 14 A Yeah. I think it extends beyond 15 talcum, too, to be honest with you. I don't -- I 16 don't consider smoking to be a strong risk for 17 ovarian cancer. And PID, I don't either. 18 So -- and I don't know of many of my -- 19 I mean, we don't -- we don't want our patients 20 smoking. But I don't know of many of the 21 gynecologic oncologists I work with who -- that's 22 on their -- that's on their risk list. 23 MS. THOMPSON: 24 Q Even for mucinous?</p>	<p>1 Q So the authors, if they were reporting 2 on the potential risk of talcum powder use in 3 ovarian cancer chose to cite Penninkilampi as a 4 source -- as the source for that information; 5 correct? 6 A They reference it. 7 Q And you would assume they would choose 8 the most authoritative article that was available 9 in the literature? 10 MS. CURRY: 11 Object to the form. 12 MS. THOMPSON: 13 Q Wouldn't you? 14 A I would not assume that. 15 Q You would assume they'd pick something 16 that wasn't as authoritative? There's something 17 else they could have picked? 18 MS. CURRY: 19 Object to the form. 20 A They may have -- they may have picked 21 that because it was one of the more recent 22 meta-analyses, and so it was convenient. And 23 it's flawed. We can go over if you'd like. 24 MS. THOMPSON:</p>
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<p>1 A Well, now you're gonna get complicated 2 on me because, you know, there are people that 3 don't think -- there are mucinous tumors of the 4 ovary. Bob Kirkman is one of them, and that is 5 all GI. 6 So I think -- I don't think it's all 7 that relevant because it's such a rare tumor. 8 Q And the citation for the reference 9 that -- 10 A 8? 11 Q -- a risk factor potentially would -- 12 could be the use of talcum powder is the 13 Penninkilampi meta-analysis; right? 14 A That's referenced in 8, yes. 15 Q So at least the authors, the reviewers, 16 the editors of the journal felt that the most 17 authoritative source would be that Penninkilampi 18 meta-analysis. Would you agree? 19 MS. CURRY: 20 Object to the form. 21 A Say that again. I'm sorry. 22 MS. THOMPSON: 23 Q Yeah. 24 A I could read it.</p>	<p>1 Q Well, I'm just saying these authors 2 picked that to -- to support the statement in 3 their review article in The Lancet that the use 4 of talcum powder is potentially a risk factor for 5 ovarian cancer. 6 A Well, I would agree that they picked 7 that reference. I disagree that that's because 8 they thought it was the most authoritative 9 article. It is one of the more recent, and, so, 10 therefore, a lot of the other papers would be 11 included in it. So it's a convenient place to 12 steer a reader. 13 Q Do you think they'd pick it if they 14 thought it was flawed? 15 MS. CURRY: 16 Object to the form. 17 A Probably if -- if it was seriously 18 flawed, I don't think they would have picked it. 19 Yeah. 20 MS. THOMPSON: 21 Q And would you agree, also, that the 22 reviewers would not have included an article that 23 the reviewers felt was seriously flawed? 24 MS. CURRY:</p>

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<p>1 Object to the form.</p> <p>2 A Again, it's a little bit -- having been</p> <p>3 involved in these processes, to be perfectly</p> <p>4 frank, you get a review article with a review of</p> <p>5 147 references, you're not gonna go through them</p> <p>6 all. So I don't know I can say with any</p> <p>7 authority that the reviewers looked at this and</p> <p>8 said, gee, they picked the one talc paper that is</p> <p>9 really spectacular.</p> <p>10 MS. THOMPSON:</p> <p>11 Q Okay. So there were -- but there --</p> <p>12 there were no --</p> <p>13 A The review, and -- and it's true for</p> <p>14 the editor too.</p> <p>15 Q Okay. So at least there were no red</p> <p>16 flags in front of the reviewers and the editor</p> <p>17 when they saw the Penninkilampi article cited for</p> <p>18 that reference?</p> <p>19 MS. CURRY:</p> <p>20 Object to the form.</p> <p>21 A I --</p> <p>22 MS. THOMPSON:</p> <p>23 Q That would cause them to --</p> <p>24 A I don't know they noticed it.</p>	<p>1 lunch?</p> <p>2 MS. CURRY:</p> <p>3 We actually did order in lunch. I'm</p> <p>4 not sure if we -- if you want to take a quick</p> <p>5 break, I can check on the estimated time of</p> <p>6 arrival.</p> <p>7 MS. THOMPSON:</p> <p>8 Sure. Or we can just keep going until</p> <p>9 we get word. Whatever --</p> <p>10 A Or we could just finish.</p> <p>11 MR. MIZGALA:</p> <p>12 I second that.</p> <p>13 MS. GARBER:</p> <p>14 You guys keep going. I'll check.</p> <p>15 MS. THOMPSON:</p> <p>16 Are you telling me you're not having</p> <p>17 fun? I think he liked the test.</p> <p>18 THE WITNESS:</p> <p>19 Yeah. It would have been nice to have</p> <p>20 the little box -- the little circles you could</p> <p>21 fill in. You know.</p> <p>22 MS. THOMPSON:</p> <p>23 And then I could just put it in the</p> <p>24 computer.</p>
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<p>1 Q Okay. But the editors selected that</p> <p>2 article; correct?</p> <p>3 MS. CURRY:</p> <p>4 Object to the form.</p> <p>5 MS. THOMPSON:</p> <p>6 Q For whatever reason?</p> <p>7 A The --</p> <p>8 Q The authors.</p> <p>9 A The authors selected it.</p> <p>10 Q Sorry.</p> <p>11 A Not -- not the editors. Correct.</p> <p>12 Q Thank you. I meant to say authors.</p> <p>13 A And, again, I would just emphasize it</p> <p>14 says "potentially use of talcum powder."</p> <p>15 Q That's right.</p> <p>16 A Okay.</p> <p>17 Q And at least in this statement, the</p> <p>18 reference to talcum powder as potentially a risk</p> <p>19 factor did not separate out the subtypes. It's</p> <p>20 referring to EOC; correct?</p> <p>21 A I -- that's the way I would read it,</p> <p>22 right.</p> <p>23 MS. THOMPSON:</p> <p>24 Dawn, what are you thinking about</p>	<p>1 THE WITNESS:</p> <p>2 No mumbling? Sorry.</p> <p>3 MS. CURRY:</p> <p>4 Okay. So the lunch, I was just told,</p> <p>5 is actually here. So it's up to you when you're</p> <p>6 in a good breaking point.</p> <p>7 MS. THOMPSON:</p> <p>8 Dr. Birrer, do you want to take a break</p> <p>9 for lunch or do you want to go another 15 or 20</p> <p>10 minutes?</p> <p>11 THE WITNESS:</p> <p>12 Going would be fine.</p> <p>13 MS. THOMPSON:</p> <p>14 Q Okay.</p> <p>15 A Yeah.</p> <p>16 Q Let's -- let's look at the IARC 93, the</p> <p>17 one that --</p> <p>18 A Uh-huh.</p> <p>19 Q -- addresses the nonasbestiform talc.</p> <p>20 And turning to page 277 in the exposure data</p> <p>21 introduction --</p> <p>22 A Uh-huh. Do you want to use mine?</p> <p>23 Q Let's have a blank one to follow along.</p> <p>24 Does this section define the</p>

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<p>1 nonasbestiform talc?</p> <p>2 MS. CURRY:</p> <p>3 Object to the form.</p> <p>4 MS. THOMPSON:</p> <p>5 Q Oh, there it is. And let's just read</p> <p>6 along in that third paragraph.</p> <p>7 A Okay.</p> <p>8 Q "Asbestiform talc fibers are very long</p> <p>9 and thin and occur in parallel bundles that are</p> <p>10 easily separated from one another by hand</p> <p>11 pressure." And asbestos -- no. Just strike</p> <p>12 that.</p> <p>13 You're -- you're not an expert in the</p> <p>14 different types of asbestos or talc in its</p> <p>15 different --</p> <p>16 A I'm learning --</p> <p>17 Q Are you?</p> <p>18 A I'm learning a lot.</p> <p>19 Q I -- well, I don't want to ask those</p> <p>20 questions to you later because then you'll be an</p> <p>21 expert.</p> <p>22 Let's -- let's go to the conclusions of</p> <p>23 IARC. We've already established that IARC used a</p> <p>24 pretty extensive methodology in reaching their</p>	<p>1 was -- well, that there was limited evidence in</p> <p>2 humans for the carcinogenicity in peroneal use of</p> <p>3 talcum powder body product. Is that what IARC</p> <p>4 concluded?</p> <p>5 A That's in 6.1, the second one. Yes.</p> <p>6 Q Right.</p> <p>7 And there is limited evidence in</p> <p>8 experimental animals; right?</p> <p>9 A 6.2. Yes.</p> <p>10 Q And in the rationale, the authors</p> <p>11 state, third paragraph, "For peroneal use of</p> <p>12 talcum-based body power, many case-control</p> <p>13 studies of ovarian cancer found a modest but an</p> <p>14 unusually consistent excessive risk, although the</p> <p>15 impact of bias and potential confounding could</p> <p>16 not be ruled out."</p> <p>17 Is -- is that your understanding of the</p> <p>18 conclusions?</p> <p>19 A That's what they concluded.</p> <p>20 Q And --</p> <p>21 A We're done with IARC?</p> <p>22 Q We're done with IARC.</p> <p>23 And you also looked at the Health</p> <p>24 Canada Assessment; right?</p>
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<p>1 conclusions; right?</p> <p>2 MS. CURRY:</p> <p>3 Object to the form.</p> <p>4 A Yes.</p> <p>5 MS. THOMPSON:</p> <p>6 Q And in your -- in your opinion, IARC</p> <p>7 got -- got it wrong; right?</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A I think the net -- and I -- let me just</p> <p>11 summarize. I agree that they did a thorough sort</p> <p>12 of process here. In the end, what they</p> <p>13 concluded, I think, was -- was wrong. If I</p> <p>14 recall correctly, it's 2B.</p> <p>15 MS. THOMPSON:</p> <p>16 Q That's right.</p> <p>17 A Was the classification.</p> <p>18 Q But 2B does not mean that it's not</p> <p>19 carcinogenic, does it?</p> <p>20 A Means it's possible carcinogenic. I</p> <p>21 think that's by definition.</p> <p>22 Q Right.</p> <p>23 And -- and in this situation, the</p> <p>24 reason for the classification was that there</p>	<p>1 A Yes.</p> <p>2 Q And we agreed that the methodology that</p> <p>3 Health Canada applied for -- for their</p> <p>4 determination was also extensive; right?</p> <p>5 MS. CURRY:</p> <p>6 Object to the form.</p> <p>7 A They were systematic and thorough. I</p> <p>8 think it was pretty complicated, yeah.</p> <p>9 MS. THOMPSON:</p> <p>10 Q And what's your understanding of the</p> <p>11 conclusions reached by the -- Health Canada?</p> <p>12 MS. CURRY:</p> <p>13 Object to the form.</p> <p>14 MS. THOMPSON:</p> <p>15 Q Scientists.</p> <p>16 A Well, they concluded that there was a</p> <p>17 low risk of harm to the environment from talc.</p> <p>18 Q Is that what you came away with?</p> <p>19 A Well, it was in the third paragraph.</p> <p>20 So it was important to note that. But they did</p> <p>21 conclude that talc meets one of the criteria.</p> <p>22 That was Section 64. And so they concluded that</p> <p>23 it potentially presented a health risk to</p> <p>24 Canadians, if I got that right.</p>

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<p>1 Q And do you think it was just to 2 Canadians?</p> <p>3 A Well, that's the way they quoted it.</p> <p>4 Q And --</p> <p>5 A In fact, the statement is "may 6 constitute a danger in Canada to health" -- 7 "human health" -- "human life or health."</p> <p>8 Q And they also made the -- well, let's 9 read beginning on page little -- little 3, i -- 10 iii?</p> <p>11 A I'm sorry. Where are you?</p> <p>12 Q Little -- little roman numeral 3.</p> <p>13 A Three? Yeah.</p> <p>14 Q Is your understanding that the -- that 15 Health Canada found that the available data were 16 indicative of a causal effect?</p> <p>17 A Where are you reading?</p> <p>18 Q I was just asking you what your 19 understanding was.</p> <p>20 MS. CURRY: Object to the form.</p> <p>21 A I'm not sure that they actually found 22 causal effects.</p> <p>23 MS. THOMPSON:</p>	<p>1 Q -- executive summary. 2 A Yeah. Uh-huh.</p> <p>3 Q "Given that there is potential for 4 peroneal exposure to talc from the use of various 5 self-care products, for example, body powder, 6 baby powder, diaper and rash creams, gentle 7 antiperspirants and deodorants, body wipes, bath 8 bombs, a potential concern for human health has 9 been identified."</p> <p>10 Correct?</p> <p>11 A I agree with that.</p> <p>12 Q And is it your opinion that Health 13 Canada got it wrong also?</p> <p>14 MS. CURRY: Object to the form.</p> <p>15 A So it's interesting. When I reviewed 16 this was -- again, this is a very recent -- looks 17 like December 2018 -- decision by Health Canada 18 based upon a huge body of literature, which I had 19 reviewed and come to a different conclusion.</p> <p>20 So there really was not very much new 21 data to draw this conclusion. So, you know, 22 again, I think very much like IARC, I think they 23 got it wrong.</p>
<p style="text-align: center;">Page 183</p> <p>1 Q Okay. Well, let's -- let's read 2 beginning -- the paragraph with "The 3 meta-analyses."</p> <p>4 A Where are you? Oh, the -- yeah.</p> <p>5 Q "The meta-analyses of the available 6 human studies in the peer-reviewed literature" --</p> <p>7 A Yep.</p> <p>8 Q -- "indicate a statistically 9 significant positive association between perineal 10 exposure to talc and ovarian cancer. Further, 11 available data are indicative of a causal 12 effect."</p> <p>13 A Uh-huh.</p> <p>14 Q So they did --</p> <p>15 A (Nods affirmatively.)</p> <p>16 Q -- determine that it was indicative of 17 a causal effect; right?</p> <p>18 MS. CURRY: Object to the form.</p> <p>19 A That's what they said, yes. It's not 20 referenced, but --</p> <p>21 MS. THOMPSON:</p> <p>22 Q Well, this is the --</p> <p>23 A Yeah.</p>	<p style="text-align: center;">Page 185</p> <p>1 MS. THOMPSON: Q And you don't think that this is a 3 situation where scientists can look at the same 4 data and -- and make different conclusions?</p> <p>5 A No.</p> <p>6 MS. CURRY: Object to the form.</p> <p>7 MS. THOMPSON: Q Do you have any reason to believe that 10 the scientists who worked on this project were 11 unreasonable?</p> <p>12 MS. CURRY: Object to the form.</p> <p>13 A Other than the fact they drew the wrong 14 conclusion here, I know nothing else about them, 15 so...</p> <p>16 MS. THOMPSON: Q You don't have any reason to believe 19 they were incompetent?</p> <p>20 MS. CURRY: Object to the form.</p> <p>21 A No.</p> <p>22 MS. THOMPSON: Q Do you have any reason to believe that</p>

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<p>1 they weren't good scientists?</p> <p>2 MS. CURRY:</p> <p>3 Object to the form.</p> <p>4 A I don't really have a lot of knowledge</p> <p>5 of them. If I could actually find the list of</p> <p>6 individuals who made this decision -- I don't</p> <p>7 think it's published.</p> <p>8 MS. THOMPSON:</p> <p>9 Q And did you -- this was done under the</p> <p>10 auspices, I believe, of the Minister of Health.</p> <p>11 A Uh-huh.</p> <p>12 Q You don't know the Minister of Health</p> <p>13 in Canada, do you?</p> <p>14 A I don't.</p> <p>15 Q Or know that he would -- or she would</p> <p>16 not be competent?</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 A I have no direct evidence for that.</p> <p>20 MS. THOMPSON:</p> <p>21 Q Do you take any issue with the weight</p> <p>22 of the evidence methodology that Health Canada</p> <p>23 applied?</p> <p>24 A No.</p>	<p>1 A In terms of peer review, scientific</p> <p>2 peer review?</p> <p>3 Q Correct.</p> <p>4 A I can't say that definitively.</p> <p>5 Q If you'll look at the -- and the copy</p> <p>6 that I'm looking at doesn't have page numbers, so</p> <p>7 that's why it's -- I'm --</p> <p>8 A Roughly.</p> <p>9 Q -- making it difficult.</p> <p>10 But if you look at the big bold</p> <p>11 introduction that comes right after the synopsis,</p> <p>12 it should be about the -- it may be the little</p> <p>13 numbers.</p> <p>14 A Introduction?</p> <p>15 Q Yeah.</p> <p>16 And the very bottom of that page, I'm</p> <p>17 reading "The human health portion of this</p> <p>18 assessment has undergone external peer review</p> <p>19 and/or consultation?"</p> <p>20 Doesn't -- does the assessment, at</p> <p>21 least, state that it underwent peer review and</p> <p>22 consultation?</p> <p>23 A It states that. I don't quite -- I</p> <p>24 don't honestly know what that means.</p>
<p style="text-align: center;">Page 187</p> <p>1 Q Only that they came up with the wrong</p> <p>2 conclusion; right?</p> <p>3 A Correct.</p> <p>4 Q And this assessment, like IARC, was</p> <p>5 based on talc -- cosmetic-grade talc and not on</p> <p>6 potential impurities such as asbestos. Is that</p> <p>7 also your understanding?</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A That is my understanding. So, you</p> <p>11 know, again, it's -- it's the same epi data. The</p> <p>12 epi data is focused on talcum powder. So that --</p> <p>13 that applies here, too.</p> <p>14 MS. THOMPSON:</p> <p>15 Q And is it your understanding that the</p> <p>16 human health portion of the Health Canada</p> <p>17 assessment went through a peer-review process?</p> <p>18 MS. CURRY:</p> <p>19 Object to the form.</p> <p>20 MS. THOMPSON:</p> <p>21 Q With external reviewers.</p> <p>22 A I didn't see that described.</p> <p>23 Q So you don't know one way or the other</p> <p>24 whether it went through a review process?</p>	<p style="text-align: center;">Page 189</p> <p>1 Q Okay.</p> <p>2 A And the public comment period, of</p> <p>3 course, is just a governmental response.</p> <p>4 Q Do you know if Johnson & Johnson has</p> <p>5 submitted comments to Health Canada?</p> <p>6 MS. CURRY:</p> <p>7 Object to the form.</p> <p>8 A Not that I know of.</p> <p>9 MS. THOMPSON:</p> <p>10 Q Have you submitted comments to Health</p> <p>11 Canada --</p> <p>12 A No.</p> <p>13 Q -- with your opinions?</p> <p>14 A No.</p> <p>15 Q Do you intend to submit any opinions to</p> <p>16 Health Canada?</p> <p>17 A I doubt it.</p> <p>18 Q You are -- are you aware that talc used</p> <p>19 as a dry powder lubricant on condoms was</p> <p>20 substituted with cornstarch in the 1990s?</p> <p>21 A I believe I am familiar with that.</p> <p>22 Q Do you know why?</p> <p>23 A No.</p> <p>24 Q Do you know that dusting diaphragms,</p>

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<p>1 the practice of dusting diaphragms with talcum 2 powder was abandoned approximately the same time? 3 MS. CURRY: 4 Object to the form. 5 A Yes. 6 MS. THOMPSON: 7 Q Do you know why? 8 A No. 9 Q Was it for concerns about inflammatory 10 and cancer effects? 11 MS. CURRY: 12 Object to the form. 13 A Could have been. I don't -- can't 14 quote that. 15 MS. THOMPSON: 16 Q Were you aware that FDA banned -- has 17 banned powder examination and surgical gloves? 18 A Yes. 19 Q Do you know why? 20 A That was based upon the concern about 21 the generation of fibrosis. 22 Q And other inflammatory processes in 23 the -- in the peritoneal cavity? 24 MS. CURRY:</p>	<p>1 Q Are you aware of the differences 2 between cornstarch and talc? 3 MS. CURRY: 4 Object to the form. 5 A In terms of biochemical and physical 6 differences? 7 MS. THOMPSON: 8 Q Sure. Let's start there. 9 A Yeah. I don't think I can list them 10 all. But certainly cornstarch is a biologic 11 agent, it's a carbohydrate, and talc is a 12 mineral. 13 We've already talked a little bit about 14 the size of particles in talcum powder and it's 15 exceedingly variable. So it's a little hard to 16 compare those two particles. But I would think 17 that starch would be more homogeneous and of a 18 different size. 19 And then, you know, biochemical 20 differences are substantial. I mean, this is a 21 carbohydrate, which can be broken down by certain 22 enzymes, has, you know, a firm structure to it. 23 Talc, as a mineral, forms suspensions. 24 It is not soluble. Starch is more soluble. So</p>
<p style="text-align: center;">Page 191</p> <p>1 Object to the form. 2 A I would define -- I would define that 3 as fibrosis, if not inflammatory. 4 MS. THOMPSON: 5 Q Do you consider granulomas an 6 inflammatory response? 7 A It's in the characterization of chronic 8 inflammation, yes. 9 Q Are adhesions an inflammatory response? 10 A Not necessarily. 11 Q And they would be an acute response 12 if -- if they were caused by an inflammatory 13 reaction? 14 MS. CURRY: 15 Object to the form. 16 A So adhesions are, you know, essentially 17 scar tissue and fibrosis. The etiology of it is 18 pretty broad. Some of it could be chronic 19 inflammation. Some of it could be acute 20 inflammation. And I would not even rule out the 21 possibility that general wound healing would give 22 rise to scar tissue. And that may not 23 necessarily fit the criteria of inflammation. 24 MS. THOMPSON:</p>	<p style="text-align: center;">Page 193</p> <p>1 there's differences. 2 Q So, in general terms, cornstarch would 3 typically be absorbed or metabolized by the body? 4 MS. CURRY: 5 Object to the form. 6 MS. THOMPSON: 7 Q Would you agree? 8 A Absorbed or -- there's -- it would 9 certainly be more likely, I think, than a 10 mineral, yeah. 11 Q Whereas the mineral, once it's there, 12 is expected to remain there; correct? 13 MS. CURRY: 14 Object to the form. 15 A It's a little hard to tell because then 16 there are other mechanisms remove particulate 17 matters; right? So macrophages come along and 18 they phagocytize them. That macrophage then may 19 travel somewhere else and then essentially 20 deposit it in a way that the mineral -- the 21 mineral particle could be removed. So -- so it's 22 a little bit complex. 23 MS. THOMPSON: 24 Q Can inhaled talc particles appear in</p>

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<p>1 distant organs?</p> <p>2 A So there is some data, I believe, in</p> <p>3 animal studies that high concentrations of talc,</p> <p>4 either in the pleural cavity or in intratracheal</p> <p>5 injections can end up in what --</p> <p>6 And I think I put them in the expert</p> <p>7 report; for instance, the spleen.</p> <p>8 Q And ovaries? Can they occur in the</p> <p>9 ovaries?</p> <p>10 A So if you look at the literature -- you</p> <p>11 know, and I went through in pretty big detail --</p> <p>12 nobody's looked. So there's no reproductive</p> <p>13 organs in any of those studies. At least the</p> <p>14 ones that I have looked at. So I don't think we</p> <p>15 know, and I don't think we could assume that.</p> <p>16 Q Can talc fibers enter the peritoneal</p> <p>17 cavity?</p> <p>18 MS. CURRY:</p> <p>19 Object to the form.</p> <p>20 A Again, we're back to this mineral</p> <p>21 structure, and I'm not going to be able to</p> <p>22 comment on that.</p> <p>23 MS. THOMPSON:</p> <p>24 Q And how about asbestos fibers?</p>	<p>1 know that.</p> <p>2 Q So you know -- you -- we know that</p> <p>3 asbestos fibers can reach the peritoneal cavity;</p> <p>4 correct?</p> <p>5 A Yes.</p> <p>6 Q And -- and let me just understand</p> <p>7 you -- what you're opining today is that we just</p> <p>8 don't know how they get there?</p> <p>9 MS. CURRY:</p> <p>10 Object to the form.</p> <p>11 A I don't know. So -- so I think one of</p> <p>12 the hypotheses that -- after asbestos -- again,</p> <p>13 I'm not -- I wasn't asked to explore asbestos in</p> <p>14 great detail. This is more my medical training</p> <p>15 speaking.</p> <p>16 But as people inhaled asbestos, these</p> <p>17 particles would work their way out into the</p> <p>18 pleural cavity --</p> <p>19 MS. THOMPSON:</p> <p>20 Q So --</p> <p>21 A -- which is where they would do their</p> <p>22 badness. And then, there is a hypothesis</p> <p>23 connection between the pleural cavity and the</p> <p>24 peritoneal cavity.</p>
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<p>1 A Well, asbestos exposure can, of course,</p> <p>2 give rise to mesothelioma and can give rise to</p> <p>3 peritoneal mesotheliomas. So it's got to get</p> <p>4 there from somewhere.</p> <p>5 Q Do you have an opinion as to whether</p> <p>6 asbestos fibers can get to the peritoneal cavity</p> <p>7 through peritoneal exposure and migration through</p> <p>8 the genital tract?</p> <p>9 MS. CURRY:</p> <p>10 Object to the form.</p> <p>11 A I don't have any data on that.</p> <p>12 MS. THOMPSON:</p> <p>13 Q So you have no opinion.</p> <p>14 A I would say analogous with the</p> <p>15 migration data that there's not a lot of evidence</p> <p>16 things are migrating retrograde. So -- and I</p> <p>17 think -- although I don't think those experiments</p> <p>18 have been done with asbestos in mind -- and we</p> <p>19 know that asbestos can travel with high</p> <p>20 insulation [sic] -- you know, inhalation of</p> <p>21 asbestos can get in the pleural cavity. It gets</p> <p>22 there from somewhere. It's got to be inside the</p> <p>23 lung. It has to get out in the pleural cavity,</p> <p>24 and then again, the peritoneal cavity. So we</p>	<p>1 Q So direct penetration of the fiber</p> <p>2 through the pleura?</p> <p>3 A The diaphragm's are pretty secure</p> <p>4 structures, so it's a little bit -- I can't say,</p> <p>5 hey, here's the pathway. But that's the</p> <p>6 supposition.</p> <p>7 Q Okay.</p> <p>8 A Okay.</p> <p>9 Q Do you -- are you aware of any</p> <p>10 epidemiologic or other studies that have linked</p> <p>11 the use of perineal cornstarch with ovarian</p> <p>12 cancer?</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 A Perineal cornstarch with ovarian</p> <p>16 cancer?</p> <p>17 MS. THOMPSON:</p> <p>18 Q Correct. Let me phrase that</p> <p>19 differently just so it's clear.</p> <p>20 A Okay.</p> <p>21 Q Are you aware of any studies that link</p> <p>22 the perineal use of cornstarch products with</p> <p>23 ovarian cancer?</p> <p>24 MS. CURRY:</p>

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<p>1 Object to the form.</p> <p>2 A Therapeutically or just accidentally?</p> <p>3 MS. THOMPSON:</p> <p>4 Q Um -- as a substitute for talcum</p> <p>5 powder. If a woman is using corn -- a</p> <p>6 cornstarch-based perineal dusting powder, are you</p> <p>7 aware of any studies that have linked that usage</p> <p>8 to ovarian cancer?</p> <p>9 A Not that I -- no.</p> <p>10 Q Do you agree that -- I might go ahead</p> <p>11 and go back to that -- that -- the FDA, mark it</p> <p>12 as --</p> <p>13 A The letter?</p> <p>14 Q The letter.</p> <p>15 I know. But I don't have my stickers.</p> <p>16 MS. THOMPSON:</p> <p>17 My fault; not yours.</p> <p>18 THE COURT REPORTER:</p> <p>19 Okay.</p> <p>20 MS. THOMPSON:</p> <p>21 Shall we do another few just to get us</p> <p>22 to lunch?</p> <p>23 THE COURT REPORTER:</p> <p>24 I forget what number we're on.</p>	<p>1 summary on the following page, one, purpose and</p> <p>2 coverage of the final rule, and the last</p> <p>3 paragraph -- or the last sentence of the first</p> <p>4 paragraph says, "However, the use of powder on</p> <p>5 medical gloves presents numerous risks to</p> <p>6 patients and healthcare workers, including</p> <p>7 inflammation, granulomas and respiratory allergic</p> <p>8 reaction."</p> <p>9 Does that at least state what the FDA</p> <p>10 considers the reasons for the removal of talcum</p> <p>11 powder from surgical gloves?</p> <p>12 A Yes, it does.</p> <p>13 Q Are you aware that Health Canada</p> <p>14 determined that the migration of talc particles</p> <p>15 to the ovaries from perineal use was a plausible</p> <p>16 or is a plausible mechanism for the detection of</p> <p>17 talc in the ovaries?</p> <p>18 MS. CURRY:</p> <p>19 Object to the form.</p> <p>20 A I believe they did. You're --</p> <p>21 MS. THOMPSON:</p> <p>22 Q And you -- do you disagree with the</p> <p>23 determination that Health Canada reached</p> <p>24 regarding the -- the migration of talc particles</p>
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<p>1 MS. THOMPSON:</p> <p>2 We're on --</p> <p>3 MS. EVERETT:</p> <p>4 14.</p> <p>5 MS. THOMPSON:</p> <p>6 14.</p> <p>7 (DEPOSITION NUMBER 14 WAS</p> <p>8 MARKED FOR IDENTIFICATION.)</p> <p>9 MS. THOMPSON:</p> <p>10 Q I'm going to go ahead and mark the FDA</p> <p>11 announcement on the banning of -- of talcum</p> <p>12 powder just so we can see what they actually did</p> <p>13 say about the reasons.</p> <p>14 And --</p> <p>15 A This is for gloves. For gloves.</p> <p>16 Surgical gloves.</p> <p>17 Q Examination and surgical gloves.</p> <p>18 A Yeah.</p> <p>19 Q And just in the bottom part of the</p> <p>20 right-hand side of the first page, "Banned</p> <p>21 Devices; Powdered Surgeon's Gloves, Powdered</p> <p>22 Patient Examination Gloves, and Absorbable Powder</p> <p>23 For Lubricating on a Surgeon's Glove."</p> <p>24 And if you'll turn to the executive</p>	<p>1 to the ovaries being a plausible mechanism for</p> <p>2 the detection of talc in ovaries?</p> <p>3 A Yes, I do.</p> <p>4 Q In your report, you state that the</p> <p>5 migration is contrary to basic anatomy and common</p> <p>6 sense, I believe.</p> <p>7 Do you still hold that opinion?</p> <p>8 A Where are you reading? Back to my</p> <p>9 report?</p> <p>10 Q I have to get your report out.</p> <p>11 A Yeah. That's get that out there.</p> <p>12 Q His expert report.</p> <p>13 And in the -- under "Migration" on page</p> <p>14 5, "Supposed Presence of Talc in Ovaries."</p> <p>15 A Ah. Okay. Yep.</p> <p>16 Q And Health Canada's conclusion was that</p> <p>17 the migration of talc particles to the ovaries</p> <p>18 from perineal use is a plausible mechanism for</p> <p>19 the detection of talc to the ovaries.</p> <p>20 But at least your opinion is that the</p> <p>21 presence of talc in the ovaries cannot be</p> <p>22 explained by migration. Is that right?</p> <p>23 A Well, the studies that I looked at here</p> <p>24 mostly are the presence of talc in cancer of the</p>

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<p>1 ovary, and there were some control patients, I 2 believe, with breast cancer where they looked at 3 the ovary. 4 And these -- these studies have been 5 around for a while. I've reviewed them multiple 6 times, and they're just seriously flawed, from my 7 perspective. So I don't know that you can 8 conclude that. But these are -- these are just 9 the studies that show the presence of talc in 10 specimens. It's not the next line of evidence, 11 which is actual variety of human -- human 12 experiments, if you will, which are also 13 seriously flawed. 14 So, you know, I essentially reviewed 15 all of that and came to the conclusion you can't 16 conclude anything. There's no convincing data. 17 Health Canada came to a different conclusion. 18 Q And is that because Health Canada got 19 it wrong again, or is that because scientists can 20 come to different conclusions when reviewing the 21 same data? 22 MS. CURRY: 23 Object to the form. 24 A Based on my review on this, they got it</p>	<p>1 A I think they were mystified and they 2 tried to argue that the reason why they found 3 talc in everybody -- 4 MS. THOMPSON: 5 Q Dr. Birrer, sorry. 6 My question was: Do you know what the 7 authors concluded? 8 A I'm saying it. 9 Q That's "yes" or "no." 10 A Oh. 11 Q Do you know what the authors concluded? 12 MS. CURRY: 13 Object to the form. 14 A Yes. 15 MS. THOMPSON: 16 Q What did the authors conclude? 17 A So I think they were mystified. And 18 so -- 19 Q No. Did the authors -- where do you 20 see in the paper that the authors were mystified? 21 A Because -- 22 MS. CURRY: 23 Let him finish and don't cut him off. 24 MS. THOMPSON:</p>
<p>1 wrong. 2 MS. THOMPSON: 3 Q Regarding the Heller paper -- 4 A Uh-huh. 5 Q -- let's just go back to your report. 6 Do you know what the Heller authors 7 concluded from their study? 8 MS. CURRY: 9 Object to the form. 10 A Do you -- 11 MS. THOMPSON: 12 Q This is the paper regarding the talc 13 presence in -- 14 A Right. 15 Q -- ovaries from the Heller paper. 16 MS. CURRY: 17 Object to the form. 18 A So just to summarize real quick -- 19 MS. THOMPSON: 20 Q No. Not asking that question. 21 Do you know what the Heller authors 22 concluded on the basis of their study? 23 MS. CURRY: 24 Object to the form.</p>	<p>1 Not when he's not answering my 2 question. 3 THE WITNESS: 4 Well, I -- 5 MS. CURRY: 6 He's trying to answer it. You keep 7 cutting him off at every word. 8 MS. THOMPSON: 9 I asked where in the paper did the 10 authors say they were mystified, and he needs to 11 explain that. 12 MS. CURRY: 13 You haven't even marked the paper. You 14 are asking him based on his expert report, and 15 he's -- 16 MS. THOMPSON: 17 I didn't ask him on the basis of his 18 expert report. I asked him on the basis of his 19 knowledge. 20 I'll mark the Heller paper 15. 21 (DEPOSITION EXHIBIT NUMBER 15 WAS 22 MARKED FOR IDENTIFICATION.) 23 MS. THOMPSON: 24 Q Do you see anywhere in the paper that</p>

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<p>1 the authors were mystified? Yes or no?</p> <p>2 A I think they were confused by the lack</p> <p>3 of association.</p> <p>4 Q Do you see where the authors were</p> <p>5 mystified?</p> <p>6 MS. CURRY:</p> <p>7 Object to the form.</p> <p>8 MS. THOMPSON:</p> <p>9 Q There's nowhere where the authors say</p> <p>10 they were mystified, is there, Dr. Birrer?</p> <p>11 MS. CURRY:</p> <p>12 Object to the form.</p> <p>13 MS. THOMPSON:</p> <p>14 Q I'll withdraw the question.</p> <p>15 A Okay.</p> <p>16 Q Let's just go to the conclusions.</p> <p>17 "Conclusions: The detection of talc in</p> <p>18 all ovaries demonstrates that it can reach the</p> <p>19 upper genital tract."</p> <p>20 Is that what the authors of the Heller</p> <p>21 paper conclude?</p> <p>22 A Yes.</p> <p>23 Q And yet you're critical of the</p> <p>24 plaintiffs' experts because they conclude the</p>	<p>1 Q Is that your opinion?</p> <p>2 A Say that again.</p> <p>3 Q It's not that scientists can come to</p> <p>4 different conclusions. It's that the 12 experts</p> <p>5 who state the same conclusions as the authors of</p> <p>6 the paper are wrong and you're right?</p> <p>7 MS. CURRY:</p> <p>8 Object to the form.</p> <p>9 MS. THOMPSON:</p> <p>10 Q Is that a correct statement?</p> <p>11 A Correct.</p> <p>12 Q One of your criticisms of the Cramer</p> <p>13 paper from 2007 that detected talc in lymph nodes</p> <p>14 was that it was a case report; correct?</p> <p>15 A Correct.</p> <p>16 Q And you've published with Dr. Cramer;</p> <p>17 correct?</p> <p>18 A I don't think I'm on papers with</p> <p>19 Dr. Cramer.</p> <p>20 Q And have you seen the paper that was</p> <p>21 published recently of a series of cases in which</p> <p>22 talc was detected in the lymph nodes?</p> <p>23 MS. CURRY:</p> <p>24 Object to the form.</p>
<p style="text-align: center;">Page 207</p> <p>1 same thing that the authors of the paper</p> <p>2 conclude; right?</p> <p>3 MS. CURRY:</p> <p>4 Object to the form.</p> <p>5 MS. THOMPSON:</p> <p>6 Q In fact, I -- well, go ahead and</p> <p>7 answer.</p> <p>8 A Well, I'm critical of the paper and the</p> <p>9 experts who agreed with it.</p> <p>10 Q And I -- I think there were no fewer</p> <p>11 than 12 experts that you think were wrong on</p> <p>12 this; right?</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 A If that's the number of experts that</p> <p>16 agreed to it, then, yeah. I agree on that.</p> <p>17 MS. THOMPSON:</p> <p>18 Q And it's not that scientists can come</p> <p>19 to different conclusions. It's that 12 experts</p> <p>20 who state the same conclusions as the authors of</p> <p>21 the paper are wrong and you're right?</p> <p>22 MS. CURRY:</p> <p>23 Object to the form.</p> <p>24 MS. THOMPSON:</p>	<p style="text-align: center;">Page 209</p> <p>1 A Do you have an author?</p> <p>2 MS. THOMPSON:</p> <p>3 Q Same authors.</p> <p>4 A So Dr. Cramer --</p> <p>5 Q The lead author is McDonald, but from</p> <p>6 Cramer's lab --</p> <p>7 A I have seen it.</p> <p>8 Q -- and Welch. You've seen it?</p> <p>9 A Uh-huh.</p> <p>10 Q And is it your understanding that the</p> <p>11 authors -- I'll mark the McDonald paper Exhibit</p> <p>12 16.</p> <p>13 (DEPOSITION EXHIBIT NUMBER 16 WAS</p> <p>14 MARKED FOR IDENTIFICATION.)</p> <p>15 MS. THOMPSON:</p> <p>16 Q Is it your understanding that the</p> <p>17 authors specifically controlled for any</p> <p>18 possibility of contamination?</p> <p>19 MS. CURRY:</p> <p>20 Object to the form.</p> <p>21 A No. That's not my understanding.</p> <p>22 MS. THOMPSON:</p> <p>23 Q Well, it's in the abstract, if we can</p> <p>24 get -- delve deeper if we need to. The authors</p>

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<p>1 said that since talc can be a surface contaminant 2 from tissue collection preparation, digestion 3 measurements may be influenced by contamination. 4 Instead, because they preserve anatomic landmarks 5 and permit identification of particles in cells 6 and tissues polarized light microscopy and in 7 situ SEM-EDX are recommended to assess talc in 8 lymph nodes.</p> <p>9 And that's the methodology that the 10 authors, the researchers, performed to assure 11 themselves that this finding was not due to 12 contamination; right?</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 A You are reading correctly.</p> <p>16 MS. THOMPSON:</p> <p>17 Q I didn't even read that.</p> <p>18 A Oh.</p> <p>19 Q I came up with that --</p> <p>20 A Oh. I thought you were looking at the 21 paper.</p> <p>22 Q Well, I must be right, then.</p> <p>23 A I mean, they -- they observe -- I read 24 this -- I'll read it. "In conclusion, talc</p>	<p>1 MS. CURRY: 2 Object to the form. 3 A So they -- they observe -- they observe 4 large amounts of contamination. They argue that 5 with their technology, they can tell whether some 6 is surface and some is internal, in lymph nodes.</p> <p>7 MS. THOMPSON:</p> <p>8 Q And they determined that some was 9 internal; right?</p> <p>10 A I believe so.</p> <p>11 Q Probably have another, what, five 12 minutes and then lunch, or I can do it after we 13 come back.</p> <p>14 MS. CURRY:</p> <p>15 Is that okay with you?</p> <p>16 A That's okay.</p> <p>17 MS. CURRY:</p> <p>18 Is that okay with the court reporter?</p> <p>19 THE COURT REPORTER:</p> <p>20 That's fine. Yes.</p> <p>21 THE WITNESS:</p> <p>22 You all right? I'll stop mumbling.</p> <p>23 MS. THOMPSON:</p> <p>24 Q Okay. I want to go over just a few of</p>
<p style="text-align: center;">Page 211</p> <p>1 contamination in the surface of surgical 2 pathology specimens of is common."</p> <p>3 Q Except -- and I didn't have a question 4 on the table.</p> <p>5 A Okay.</p> <p>6 Q So I'll object to that as being 7 nonresponsive to a question.</p> <p>8 Except the whole purpose of this study 9 was to, number one, expand on the case report 10 that was published earlier; right?</p> <p>11 MS. CURRY:</p> <p>12 Object to the form.</p> <p>13 A I don't see that. It's another study.</p> <p>14 MS. THOMPSON:</p> <p>15 Q Okay.</p> <p>16 A Yeah.</p> <p>17 Q But this had a series of 22 cases; 18 right?</p> <p>19 A Twenty-two cases, correct.</p> <p>20 Q And -- and the authors concluded that 21 by -- by using the techniques that they used in 22 this pap- -- in this paper, they could confirm 23 that the -- the talc in the lymph nodes was not 24 surface contamination. Right?</p>	<p style="text-align: center;">Page 213</p> <p>1 your criticisms of plaintiffs' experts. And 2 let's start with Dr. Clarke-Pearson. I believe 3 that you have met Dr. Clarke-Pearson and know him 4 by reputation, at least; correct?</p> <p>5 A I have.</p> <p>6 Q He's a past president, I believe, of 7 SGO; correct?</p> <p>8 A Correct.</p> <p>9 Q And department chair at University of 10 North Carolina, recently retired; correct?</p> <p>11 A Correct.</p> <p>12 Q And -- and you actually wrote the 13 criticism here of Dr. Clarke-Pearson?</p> <p>14 A Correct.</p> <p>15 Q And that's your language?</p> <p>16 A Uh-huh.</p> <p>17 Q Okay. Let's just read through that. 18 "Dr. Clarke-Pearson analogizes to the migration 19 of sperm" -- and this is considering the 20 migration of talc particles -- "into tubes after 21 coitus. It is rather surprising to hear this 22 from a gynecological oncologist."</p> <p>23 Did you look at Dr. Clarke-Pearson's 24 references?</p>

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1	A I looked at his expert report.	1 A Are they dead dead or --
2	Q Including his references?	2 Q Do you think dead sperm may be motile?
3	A I probably would have paged through it,	3 Do you know any -- too much about reproductive
4	yeah. Yep.	4 physiology?
5	Q "The obvious difficulty with this line	5 MS. CURRY:
6	of reasoning is the fact that spermatozoa are	6 Object to the form.
7	motile and have evolved under millions of years	7 A A fair amount, yeah.
8	to be able to migrate under their own control to	8 MS. THOMPSON:
9	increase the potential to fertilize the egg.	9 Q And you don't know whether dead sperm
10	This mode of transport is not consistent with a	10 would be motile or not?
11	talc particle."	11 A So how are you defining that?
12	Did you look at Dr. Pearson's citation	12 They're -- they're -- they've decayed? They're
13	that describes the movement of dead sperm and	13 broken down --
14	talc particles through that upper genital tract?	14 Q Yes.
15	MS. CURRY:	15 A -- or the flagella is not moving?
16	Object to the form.	16 Q The flagella is not moving in a dead
17	A Yeah. I didn't see the -- I didn't see	17 sperm.
18	the reference on dead sperm. But --	18 A Okay.
19	MS. THOMPSON:	19 Q Is it?
20	Q If -- if there was a reference that	20 A I guess as you are specifically
21	dead sperm moved through and moved through quite	21 defining --
22	easily, then your statement that it's not	22 Q Are you arguing me -- with me?
23	analogous because spermatozoa are motile is	23 A Can I answer?
24	incorrect, isn't it?	24 MS. CURRY:
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1	MS. CURRY:	1 I'm sorry. You can each just take
2	Object to the form.	2 turns. Just please let her get her question out.
3	A Well, I have to see the paper, and I	3 MS. THOMPSON:
4	don't know the details.	4 Q Do you not know whether dead sperm
5	MS. THOMPSON:	5 would be motile or not?
6	Q Assume with me that there is evidence	6 A I would think most of the time they
7	published in the peer-reviewed literature that	7 would not be motile.
8	dead sperm and sperm particles move through the	8 Q Okay. And would you agree that a sperm
9	upper genital tract, then your statement that	9 particle -- for example, if the flagellum is
10	it's not analogous because spermatozoa are motile	10 broken off, would you agree that would not be
11	would be incorrect; right?	11 motile, a sperm particle?
12	MS. CURRY:	12 MS. CURRY:
13	Object to the form.	13 Object to the form.
14	A So these sperm would be put on the	14 A Motile, moving under its own --
15	perineum like a dusting?	15 MS. THOMPSON:
16	MS. THOMPSON:	16 Q Moving on its own.
17	Q No.	17 A Yeah. I think it's unlikely.
18	A Okay.	18 Q Do you know the size of the head of a
19	Q I'm just saying it's -- your statement	19 sperm?
20	that that is the reason would be incorrect.	20 A No.
21	A I -- so --	21 Q If the reason that Dr. Clarke-Pearson
22	Q Are -- are dead sperm motile?	22 was incorrect referencing dead and -- dead sperm
23	A I don't actually know. They --	23 and sperm particles moving through the upper
24	Q You're --	24 genital tract could be relevant to a talc

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<p>1 particle. If your reason for saying that opinion 2 is incorrect is that sperm are motile, then that 3 reasoning is incorrect, isn't it?</p> <p>4 MS. CURRY:</p> <p>5 Object to the form.</p> <p>6 A Well, I think in the way it's expressed 7 here, that, obviously, it doesn't mean -- I mean, 8 it makes no sense to apply to spermatozoa, which 9 are mobile. But if you're telling me there's a 10 reference for dead sperm, then the question 11 becomes what's in that reference? So these --</p> <p>12 MS. THOMPSON:</p> <p>13 Q Okay.</p> <p>14 A -- dead sperm were deposited into the 15 uterus after coitus and --</p> <p>16 Q We're just talking -- we're not talking 17 about coitus.</p> <p>18 Is it plausible to you --</p> <p>19 A Okay.</p> <p>20 Q -- that a woman who has talcum on her 21 perineum --</p> <p>22 A Uh-huh.</p> <p>23 Q -- could have coitus and the talcum 24 powder on the perineum could be placed in the</p>	<p>1 Object to the form.</p> <p>2 A Yeah, I don't know what --</p> <p>3 MS. THOMPSON:</p> <p>4 Q Those are your words. Are 5 Dr. Clarke-Pearson's opinions contrary to 6 knowledge of basic anatomy?</p> <p>7 MS. CURRY:</p> <p>8 Object to the form.</p> <p>9 A Where are you reading?</p> <p>10 MS. THOMPSON:</p> <p>11 Q Well, for right now I was just in the 12 first paragraph of "Hypothesized migration of 13 talc to ovaries."</p> <p>14 A What page? Is it on my report?</p> <p>15 Q Page 7.</p> <p>16 A Okay.</p> <p>17 Oh. So you're relating that statement 18 to Clarke-Pearson?</p> <p>19 Q Well, I believe you say that all the 20 experts have -- have a theory that's contrary to 21 basic anatomy and common sense.</p> <p>22 A No. What that refers to, I think, is 23 the fact that you're putting -- you're dusting 24 the perineum many times, most of the times, in a</p>
<p style="text-align: center;">Page 219</p> <p>1 vagina forcefully? Is that plausible?</p> <p>2 A I don't have any data on that.</p> <p>3 Q Do you have to have data to say whether 4 or not that's plausible?</p> <p>5 A I am a scientist.</p> <p>6 Q Well, maybe take off your scientist 7 hat. Is it plausible that a woman who has talcum 8 powder on her perineum and has sex, that the 9 talcum powder could be forced into the vagina?</p> <p>10 MS. CURRY:</p> <p>11 Object to the form.</p> <p>12 MS. THOMPSON:</p> <p>13 Q Is it plausible?</p> <p>14 A Sexual intercourse?</p> <p>15 Q Sexual intercourse, yes.</p> <p>16 A Yes. Just getting specifics.</p> <p>17 Yeah. I mean, I -- I think the way 18 you're hypothesizing it, I suppose there's a 19 possibility.</p> <p>20 Q So if those things are possible and 21 plausible, then you really don't think 22 Dr. Clarke-Pearson's opinions are unreasonable 23 and -- and are contrary to basic anatomy, do you?</p> <p>24 MS. CURRY:</p>	<p style="text-align: center;">Page 221</p> <p>1 woman who's vertical, and this concept is that 2 somehow that talc and dust essentially ascends 3 into the ovary. And I think that more often than 4 not lacks common sense and basic anatomy because 5 of what I just said.</p> <p>6 Now, if you want to go through each 7 individual study, I'm happy to do that because 8 there are methodologic flaws in them. But that 9 statement does not relate directly to 10 Dr. Clarke-Pearson. If it did, it would be under 11 his name.</p> <p>12 Q But you talk generally about 13 plaintiffs' experts, too. And do you think that 14 you have a better understanding of female anatomy 15 than Dr. Clarke-Pearson?</p> <p>16 MS. CURRY:</p> <p>17 Object to the form.</p> <p>18 A Dr. Clarke-Pearson's pretty good with 19 female anatomy.</p> <p>20 MS. THOMPSON:</p> <p>21 Q Do you think you have a better 22 understanding than Dr. Clarke-Pearson of female 23 reproductive physiology?</p> <p>24 MS. CURRY:</p>

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<p>1 Object to the form.</p> <p>2 A No. I think he would be more versed in</p> <p>3 that.</p> <p>4 MS. THOMPSON:</p> <p>5 Q And -- and you've just testified that</p> <p>6 we're not just talking about a woman standing up</p> <p>7 and putting dusting powder and the ascension. We</p> <p>8 are talking about the possibility, in your words,</p> <p>9 that powder could be on the perineum and</p> <p>10 introduced in the vagina forcefully with sexual</p> <p>11 intercourse; right?</p> <p>12 A Well, yes --</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 A We just had that conversation. I mean,</p> <p>16 again, it's hypothetical. Yeah.</p> <p>17 MS. THOMPSON:</p> <p>18 Q Okay. Agreed. I mean, I agree that's</p> <p>19 your opinion.</p> <p>20 And how about a woman who applies</p> <p>21 talcum powder to a sanitary napkin? Is it</p> <p>22 possible that the talcum powder would be</p> <p>23 introduced in the vagina through menstrual flow?</p> <p>24 A Through menstrual --</p>	<p>1 Q Do you think he would know it, what's</p> <p>2 published in literature?</p> <p>3 MS. CURRY:</p> <p>4 Object to the form.</p> <p>5 A He might.</p> <p>6 MS. THOMPSON:</p> <p>7 Q So you're certainly not opining today</p> <p>8 that you have a better understanding than</p> <p>9 Dr. Clarke-Pearson of materials that can travel</p> <p>10 retrograde through the upper genital tract, do</p> <p>11 you?</p> <p>12 MS. CURRY:</p> <p>13 Object to the form.</p> <p>14 A Oh, I disagree with that.</p> <p>15 MS. THOMPSON:</p> <p>16 Q You think you do have a better</p> <p>17 understanding than Dr. Clarke-Pearson regarding</p> <p>18 whether or not particles can travel through the</p> <p>19 upper genital tract?</p> <p>20 MS. CURRY:</p> <p>21 Object to the form.</p> <p>22 A Based upon my analysis of these papers,</p> <p>23 yes.</p> <p>24 MS. THOMPSON:</p>
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<p>1 MS. CURRY:</p> <p>2 Object to the form.</p> <p>3 A Not that I know of. I don't have any</p> <p>4 data for that.</p> <p>5 MS. THOMPSON:</p> <p>6 Q Is that -- you don't think it's</p> <p>7 possible?</p> <p>8 A Again, from -- from -- it's</p> <p>9 interesting. So if menstrual flow coming out of</p> <p>10 the vagina with a sanitary napkin, the talc then</p> <p>11 gets into the vagina up to the ovaries. It</p> <p>12 doesn't make a lot of sense to me.</p> <p>13 Q What percentage of women have</p> <p>14 retrograde menstruation on a -- on a given</p> <p>15 period?</p> <p>16 A I don't understand what you mean by</p> <p>17 that.</p> <p>18 Q Do you think Dr. Clarke-Pearson</p> <p>19 probably knows that percentage?</p> <p>20 MS. CURRY:</p> <p>21 Object to the form.</p> <p>22 A I'm sure he'd probably have an opinion</p> <p>23 on it.</p> <p>24 MS. THOMPSON:</p>	<p>1 Q Well, you certainly didn't know about</p> <p>2 dead sperm and sperm particles, did you?</p> <p>3 MS. CURRY:</p> <p>4 Object to the form.</p> <p>5 A Well, it's one paper.</p> <p>6 MS. THOMPSON:</p> <p>7 Q And you don't know about -- you don't</p> <p>8 know how many -- what percentage of women have</p> <p>9 retrograde menstruation, which is a classic paper</p> <p>10 in gynecology -- gynecology? You don't know that</p> <p>11 percentage, do you?</p> <p>12 MS. CURRY:</p> <p>13 Object to the form.</p> <p>14 A I can't quote you that percentage.</p> <p>15 MS. THOMPSON:</p> <p>16 Q Do you know that women oftentimes use</p> <p>17 baby powder at bedtime?</p> <p>18 MS. CURRY:</p> <p>19 Object to the form.</p> <p>20 A I guess that's possible.</p> <p>21 MS. THOMPSON:</p> <p>22 Q And that would not be in an upright</p> <p>23 position, would it?</p> <p>24 MS. CURRY:</p>

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<p>1 Object to the form.</p> <p>2 A They may have put it on in an upright</p> <p>3 position.</p> <p>4 MS. THOMPSON:</p> <p>5 Q And do you agree that women could have</p> <p>6 powder on the perineum and use a tampon?</p> <p>7 MS. CURRY:</p> <p>8 Object to the form.</p> <p>9 A I assume that's possible, yes.</p> <p>10 MS. THOMPSON:</p> <p>11 Q And wouldn't it be possible that powder</p> <p>12 on a tampon could be introduced into the vagina?</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 A It's possible.</p> <p>16 MS. THOMPSON:</p> <p>17 Q And what -- what did Dr. Kunz, K-U-N-Z,</p> <p>18 describe in an article regarding how particles</p> <p>19 and substances are transported to the upper</p> <p>20 genital tract?</p> <p>21 A So that's the peristaltic pump.</p> <p>22 Q And describe that for me.</p> <p>23 A Yeah. So they went and looked at the</p> <p>24 contractions -- they, first of all, tried to</p>	<p>1 Object to the form.</p> <p>2 A Yeah.</p> <p>3 The problem I have with that is I'm not</p> <p>4 sure what direction the pressure is in, because</p> <p>5 obviously if you give oxytocin at the time of</p> <p>6 pregnancy after the delivery, expels the</p> <p>7 placenta, so some of that pressure's going to</p> <p>8 come down.</p> <p>9 And, then, too, the radioactive studies</p> <p>10 are really problematic because a lot of times the</p> <p>11 label will come off of the microsphere. So you</p> <p>12 don't quite know where it's going.</p> <p>13 MS. THOMPSON:</p> <p>14 Q At what points in a female's -- in a</p> <p>15 woman's cycle are oxytocin levels the highest?</p> <p>16 A I can't quote you that.</p> <p>17 Q Would that be a question for</p> <p>18 Dr. Clarke-Pearson?</p> <p>19 MS. CURRY:</p> <p>20 Object to the form.</p> <p>21 A He probably would know.</p> <p>22 MS. THOMPSON:</p> <p>23 Q And are you aware of the studies</p> <p>24 showing that not only sperm particles and dead</p>
<p style="text-align: center;">Page 227</p> <p>1 measure the pressure in the uterus based on this</p> <p>2 contraction, and they used actually ultrasound to</p> <p>3 do it, which is an indirect measure, of course.</p> <p>4 Don't know really what the pressure is.</p> <p>5 Based upon finding that, then they went</p> <p>6 on to, if I recall correctly, use micro- --</p> <p>7 radiolabeled microspheres to do -- a word I can't</p> <p>8 pronounce -- hysterosalpingoscintigraphy,</p> <p>9 whatever.</p> <p>10 Q I can't either.</p> <p>11 A Yeah. And the idea was -- if I recall</p> <p>12 correctly, the idea of that whole study was</p> <p>13 actually for -- I think fertility and pregnancy.</p> <p>14 And the idea was that they then saw this</p> <p>15 radioactivity up in the areas and drew the</p> <p>16 conclusion that there is contraction to the</p> <p>17 uterus and that they were hypothesizing that the</p> <p>18 particles then were going up the tubes of the</p> <p>19 ovaries.</p> <p>20 Q So it facilitates movement through</p> <p>21 the --</p> <p>22 A Yeah.</p> <p>23 Q -- genital tract?</p> <p>24 MS. CURRY:</p>	<p style="text-align: center;">Page 229</p> <p>1 sperm move through the upper genital tract but</p> <p>2 even motile sperm move at a much faster rate than</p> <p>3 would be predicted strictly based on their</p> <p>4 self-generated motility?</p> <p>5 MS. CURRY:</p> <p>6 Object to the form.</p> <p>7 A Yeah. I actually recall seeing that in</p> <p>8 a study.</p> <p>9 MS. THOMPSON:</p> <p>10 Q Are you aware that motile sperm</p> <p>11 preferentially go to the side where ovulation has</p> <p>12 occurred?</p> <p>13 A That, I'm not -- I can't quote you</p> <p>14 that. I don't know.</p> <p>15 Q So that would probably be another</p> <p>16 question for one of the gynecologists or --</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 MS. THOMPSON:</p> <p>20 Q -- gynecologic oncologists? Would you</p> <p>21 agree?</p> <p>22 A They -- they would have that, and their</p> <p>23 OB training would provide them with that</p> <p>24 information. Yeah.</p>

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<p>1 Q Let's break for lunch.</p> <p>2 VIDEOGRAPHER:</p> <p>3 Off the record at 12:55 p.m.</p> <p>4 (Lunch recess.)</p> <p>5 VIDEOGRAPHER:</p> <p>6 We're back on the record at 2:02 p.m.</p> <p>7 MS. THOMPSON:</p> <p>8 Q Dr. Birrer, I think we established this morning that it is your opinion that the genital use of talcum powder is not a risk factor for ovarian cancer; right?</p> <p>12 A I'm sorry. Say that -- say that again.</p> <p>13 Q It's your opinion that talcum powder is not a risk factor for ovarian cancer; right?</p> <p>15 A The use of talcum powder?</p> <p>16 Q Yes.</p> <p>17 A Correct.</p> <p>18 Q Can you point me to any article -- can you point me to an article that specifically states genital talcum powder use is not a risk factor for -- for ovarian cancer?</p> <p>22 MS. CURRY:</p> <p>23 Object to the form.</p> <p>24 A That genital talcum powder use is not a</p>	<p>1 study?</p> <p>2 MS. CURRY:</p> <p>3 Object to the form.</p> <p>4 A No. I'd have to go through them. Do you have them?</p> <p>6 MS. THOMPSON:</p> <p>7 Q We're not gonna go through the 40 studies, but --</p> <p>9 At least sitting here today, you can't think of one right offhand, can you?</p> <p>11 A I'm happy to go through the studies.</p> <p>12 Q Okay. Is it your opinion that genital talcum powder use has been proven to be a safe practice?</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A We discussed that this morning. There is no data I know that it's an unsafe practice. That's a review of the literature. And, so, it's -- I think in that context it's safe.</p> <p>21 MS. THOMPSON:</p> <p>22 Q In your previous -- or did you look at websites when you prepared your report this time regarding talcum powder exposure and the risk for</p>
<p style="text-align: center;">Page 231</p> <p>1 risk factor? I mean, if you look at the -- a lot of the case-control studies, about 40 percent of them are negative and --</p> <p>4 MS. THOMPSON:</p> <p>5 Q Well -- and by negative, you mean not statistically significant; right?</p> <p>7 A (Nods affirmatively.) Negative. And cohort studies aren't either. And -- and, actually, that -- and the cohort studies have been sort of analyzed, reanalyzed in multiple meta-analysis, and so they're all negative.</p> <p>12 Q But my question was: Did any of those studies conclude talcum powder is not a risk factor for ovarian cancer?</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A So there are studies that don't show a significant association between talcum use and --</p> <p>19 MS. THOMPSON:</p> <p>20 Q But I'm looking for --</p> <p>21 A -- and ovarian cancer.</p> <p>22 Q -- the statement that genital use of talcum is not a risk factor for ovarian cancer.</p> <p>24 Do you remember seeing that in any</p>	<p style="text-align: center;">Page 233</p> <p>1 ovarian cancer?</p> <p>2 MS. CURRY:</p> <p>3 Object to the form.</p> <p>4 A Other than PubMed?</p> <p>5 MS. THOMPSON:</p> <p>6 Q Right.</p> <p>7 Like the American Cancer Society or NCI or any websites.</p> <p>9 A Not for this one.</p> <p>10 Q Had you looked at them before?</p> <p>11 MS. CURRY:</p> <p>12 Object to the form.</p> <p>13 A I think in the previous depositions, I reported looking at one or two of them. I'd have to go back and look at that.</p> <p>16 MS. THOMPSON:</p> <p>17 Q Okay.</p> <p>18 A Yeah.</p> <p>19 Q And I think the American Cancer Society website was one of those that you looked at.</p> <p>21 Correct?</p> <p>22 A Could be.</p> <p>23 Q I'll mark 17, American Cancer Society, Talcum Powder and Cancer.</p>

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<p>1 (DEPOSITION EXHIBIT NUMBER 17 2 WAS MARKED FOR IDENTIFICATION.) 3 MS. THOMPSON: 4 Q Does that look familiar? 5 A That looks like American Cancer 6 Society's website. Because I see the logo. 7 Q And -- and would you use this statement 8 on the American Cancer Society website to be 9 support for your opinion that talcum powder use 10 is not a risk factor for ovarian cancer? 11 A Is not a risk factor? Is not? 12 Q Is not. 13 A I wouldn't refer to this, no. 14 Q Do you think that's what this document 15 states? 16 A I don't think this -- it doesn't seem 17 to me, based on what the ACS is saying -- they 18 report that their findings are mixed, with some 19 studies reporting a slightly increased risk and 20 some reporting no increase. 21 Q So the American Cancer Society, on 22 their website, states that IARC has classified 23 talc that contains asbestos as carcinogenic to 24 humans; right?</p>	<p>1 talcum powder does not increase risk, are they? 2 MS. CURRY: 3 Object to the form. 4 A Say again. 5 MS. THOMPSON: 6 Q They're not saying that talcum powder 7 use does not increase cancer risk, do they? 8 A I don't see that stated. 9 Q And -- and they say there is some 10 suggestion of a possible increase in ovarian 11 cancer risk; right? 12 A Well, the statement I see is "It's not 13 clear if consumer products containing talcum 14 increase cancer risks." That's pretty specific. 15 Q They're saying it's not clear. It's 16 not saying it's not a risk, is it? 17 MS. CURRY: 18 Object to the form. 19 A They're saying they don't know. 20 MS. THOMPSON: 21 Q Right. And then the recommendation, by 22 the American Cancer Society, would be "Until more 23 information is available, people concerned about 24 using talcum powder may want to avoid or limit</p>
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<p>1 A You're on page 3? 2 Q Yeah. 30 -- yeah, 3 of 6. 3 A Yeah. 4 Q And then based on the lack of data from 5 human studies and unlimited data in lab animal 6 studies, IARC classified inhaled talc not 7 containing asbestos as not classifiable; right? 8 A The second bullet? 9 Q The second bullet. 10 And then the third bullet is the IARC 11 that states that the perineal genital use of talc 12 powder -- talc-based body powder is possibly 13 carcinic -- carcinogenic to humans. That's the 14 2B classification; right? 15 A 2B. 16 Q And then it states that the US National 17 Toxicology Program, NTB, has not fully reviewed 18 talc with or without asbestos as a possible 19 carcinogen; right? That's what it says. 20 A Correct. 21 Q And, then, as -- as you said, the ACS 22 states it's not clear if consumer products 23 containing talcum powder increase cancer risk. 24 They're certainly not saying that</p>	<p>1 their use of consumer products that contain it." 2 But you think any recommendation of 3 that kind is not indicated; correct? 4 MS. CURRY: 5 Object to the form. 6 A Well, it depends on how you read that. 7 I mean, I think what they're suggesting is that 8 people concerned about using talcum powder, for 9 whatever reason, may want to avoid or limit their 10 use of consumer products that contain it and 11 implies that it's the stress of knowing they're 12 using it because of what they've interpreted. It 13 doesn't really make any conclusions about talcum 14 powder. 15 MS. THOMPSON: 16 Q Are there any medical benefits that 17 you're aware of from the genital use of talcum 18 powder? 19 A Well, I think it's generally used to 20 absorb -- absorb fluid. It's -- a lot of women 21 like it. It's a body image issue. You know, so 22 I think those issues -- and again, I treat a lot 23 of women with ovarian cancer -- are important. 24 Q That wasn't my question.</p>

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<p>1 Are there any medical benefits to the 2 genital use of talcum powder? 3 MS. CURRY: 4 Object to the form. 5 A That is a medical use? 6 MS. THOMPSON: 7 Q Are there any benefits, is the 8 question. 9 A Yeah. 10 MS. CURRY: 11 Object to the form. 12 MS. THOMPSON: 13 Q Where are -- where are those benefits 14 reported? 15 A That's quality of life. 16 Q Where in the medical literature can you 17 show a report that describes medical benefits 18 from the genital use of talcum powder? 19 A Well, it's not in -- and again, I 20 didn't review that for this expert report, so -- 21 but you're asking me. 22 Q When you -- if you're trying to make a 23 risk assessment, wouldn't you know if you're 24 weighing the benefits versus the potential risks?</p>	<p>1 A Again, you asked me the question about 2 do I think there's some medical benefit. I -- 3 the answer is yes. I mean -- 4 MS. THOMPSON: 5 Q But that's never been published 6 anywhere that you're aware of, has it? 7 MS. CURRY: 8 Object to the form. 9 A As I said before, I -- I can't quote 10 you that. 11 MS. THOMPSON: 12 Q Is it -- have you seen in the medical 13 literature that there are no benefits, medical 14 benefits from the use of talcum powder in the 15 genital area? 16 MS. CURRY: 17 Object to the form. 18 A I don't think I've actually seen that. 19 MS. THOMPSON: 20 Q Would you be surprised if there are 21 references in numerous articles that say because 22 there are no medical benefits of talcum powder 23 use, it's not recommended? 24 MS. CURRY:</p>
<p style="text-align: center;">Page 239</p> <p>1 A Well, I evaluated the risks, and there 2 are none. 3 Q So you just evaluated the risk and 4 it -- it wouldn't matter to you whether there 5 were benefits or not. 6 A Well, my benefit -- 7 MS. CURRY: 8 Object to the form. 9 A I'm sorry. Go ahead. I'm sorry. 10 Yeah. My benefit would be based upon 11 my own experience. It's not necessarily 12 published in medical literature. 13 MS. THOMPSON: 14 Q Okay. Well, that would certainly be 15 anecdotal, wouldn't it? 16 MS. CURRY: 17 Object to the form. 18 A Well, you know, I've got a lot of 19 experience. 20 MS. THOMPSON: 21 Q It's still anecdotal, isn't it, 22 Dr. Birrer? 23 MS. CURRY: 24 Object to the form.</p>	<p style="text-align: center;">Page 241</p> <p>1 Object to the form. 2 A I'd be happy to -- I'd be happy to 3 review them. 4 MS. THOMPSON: 5 Q Have you seen in the medical literature 6 that cornstarch products are recommended if women 7 choose to use a dusting powder over talcum 8 powder? 9 A Can you repeat that? I -- the cough. 10 Q Have you seen in the medical literature 11 that -- where cornstarch products are recommended 12 if women choose to use a dusting powder over 13 talcum powder? 14 A You know, I haven't seen the -- I 15 haven't seen the medical literature recommending 16 cornstarch over talcum. But I have seen -- I've 17 seen discussions about women who use cornstarch. 18 Q And again, there have never been any 19 risks that you're aware of into -- related to the 20 genital use of cornstarch products and the link 21 with ovarian cancer; right? 22 A I don't know of any. 23 Q You mentioned earlier this morning the 24 National Academy of Science, Engineering and</p>

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1	Medicine as a -- as a -- possibly the most	1 Q I'll give it to you in a minute.
2	reputable source of credible information.	2 A Okay.
3	Would -- did I describe that sort of	3 Q I just want to ask you a few questions
4	correctly?	4 first.
5	MS. CURRY:	5 Why did you decline to review?
6	Object to the form.	6 A I was too busy.
7	A I don't recall saying it's the most,	7 Q Okay. Because it was a big book?
8	but I used it in context of comparing IARC, if I	8 A It's monstrous.
9	recall correctly, versus some other sort of pure	9 Q However, several of the authors have
10	scientific professional organization, which I	10 been coauthors with you on -- on papers. Is one
11	would include the National Academy to be that.	11 of them Dr. Karlan?
12	MS. THOMPSON:	12 A I believe I've been on papers with
13	Q Okay. Fair enough.	13 Beth. And I think Anil Sood was on there, too.
14	And I'm sure you're familiar with the	14 THE COURT REPORTER:
15	treatise -- it's actually -- came out in book	15 Excuse me?
16	form -- of the study by the Institute of	16 THE WITNESS:
17	Medicine, I believe, at that time, on ovarian	17 Anil Sood, S-O-O-D.
18	cancer?	18 MS. THOMPSON:
19	A Yes.	19 Q And Ronald Alvarez -- Alvarez published
20	Q Did you participate at all in that	20 with you, I think?
21	study?	21 A I believe so.
22	A They asked me to review it.	22 Q Dr. Karlan's published with you.
23	Q You were one of the reviewers?	23 A (Nods affirmatively.)
24	A They asked me to review it.	24 Q Dr. Levine has published with you?
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1	Q Oh.	1 A Doug and I are on a couple of papers,
2	A I declined.	2 yeah.
3	Q They asked you to review it and you did	3 Q Doug Levine?
4	not review it. That explains it, because I	4 A Yeah.
5	didn't see your name on the list.	5 Q Dr. Odunsi, Kunle Odunsi --
6	And that was published in 2016?	6 A Kunle. Kunle.
7	A Uh-huh.	7 Q -- has published with you. And
8	Q And what was your understanding of the	8 Dr. Sood you mentioned; right?
9	purpose of that study?	9 And Dr. -- is it Tworoger or --
10	MS. CURRY:	10 A Two- -- Twergger?
11	Object to the form.	11 Q -- Two- -- Twoaiger?
12	A It -- I -- you know, I think it was --	12 A T-W-O-G-G-E-R [sic].
13	this is -- it's just medicine undertakes this	13 Q Has published with you?
14	periodically for large topics, and that was one	14 A I think so, yes. I'd have to check
15	of them, to sort of summarize the state of the	15 that.
16	science.	16 Q So you were, I would say, well
17	MS. THOMPSON:	17 represented on the --
18	Q And the -- in fact, the committee that	18 MS. CURRY:
19	did the study was a committee on the state of the	19 Object to the form.
20	science in ovarian cancer research; is that	20 A Well, I know them.
21	correct? So you called --	21 MS. THOMPSON:
22	A This is the one by Beth Karlan?	22 Q -- on the author list?
23	Q Yeah.	23 MS. CURRY:
24	A Yeah.	24 Object to the form.

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<p>1 MS. THOMPSON: 2 Q And -- and I assume you would agree 3 with me that the committee to report on the state 4 of the science of ovarian cancer research was 5 selected because of their expertise in the area; 6 correct? 7 A Yes. 8 MS. CURRY: 9 Object to the form. 10 MS. THOMPSON: 11 Q And, as we mentioned, this study was 12 under the auspices of the National Academy of 13 Science, Medicine and Engineering, Institute of 14 Medicine, I believe, originally; correct? 15 A Correct. 16 Q And is it your understanding that this 17 study was also supported by the CDC? 18 A That, I don't know. 19 Q All right. Let me just go ahead and 20 give it to you. 21 A Yeah. 22 (DEPOSITION EXHIBIT NUMBER 18 WAS 23 MARKED FOR IDENTIFICATION.) 24 MS. THOMPSON:</p>	<p>1 A Correct. 2 Q The State of the Science authors state, 3 under "Inflammation," "Studies of the 4 inflammatory marker C-reactive protein suggest a 5 possible association between inflammation and 6 increased risk of ovarian cancer," citing OC and 7 Poole. 8 "Other specific inflammatory factors 9 have also been associated with ovarian cancer." 10 Do you agree that the authors of this 11 treatise reported that there's a possible 12 association between inflammation and increased 13 risk for ovarian cancer? 14 A Well, on these -- on these two 15 sentences, I think they accurately stated, 16 "suggests association." And then they refer -- I 17 don't -- these two papers, I can't directly quote 18 you. I mean -- 19 Q And I -- and I'm not -- 20 A Yeah. 21 Q -- suggesting that they do anything 22 other than suggest the possible association. 23 A Right. 24 Q I'm not trying to read more into it.</p>
<p style="text-align: center;">Page 247</p> <p>1 Q Exhibit 18 I'm marking as Ovarian 2 Cancers, Evolving Paradigms in Research and Care. 3 And this is not the entire book, but it is the 4 entire chapter that we're going to look at, which 5 is "Prevention and Early Detection," Chapter 3. 6 And if you look on page little ix, page 7 9, preface -- 8 A 9? 9? 9 Q Little nine. 10 A Yeah. 11 Q Yeah. The -- the first sentence, "This 12 congressionally mandated report sponsored by the 13 Centers For Disease Control and Prevention 14 assesses the state of research on ovarian cancers 15 from multiple perspectives and by multiple 16 disciplines." 17 So do you agree that the Center For 18 Disease Control sponsored the study? 19 A Correct. 20 Q If you'll turn to page -- I don't have 21 pages on my copy. Page 110. Under the section 22 heading "Inflammation." And this is in a larger 23 section titled "Behavioral and Inflammatory Risk 24 Factors"; correct?</p>	<p style="text-align: center;">Page 249</p> <p>1 A Okay. 2 Q And then they describe "A meta-analysis 3 reported that exposure to asbestos was associated 4 with a 77 percent increased risk of ovarian 5 cancer mortality," citing Carmago. 6 Are you familiar with that paper? 7 A I am familiar with that. That's the 8 occasional exposure, if I recall correctly. 9 Q And "The International Agency For 10 Research on Cancer determined that there was 11 sufficient evidence to support a causal 12 relationship between asbestos exposure and 13 ovarian cancer." 14 So the authors of this treatise include 15 exposure to asbestos and its association with 16 ovarian cancer in the Inflammation section of -- 17 of risk factors; right? 18 A Say that again? Sorry. For asbestos? 19 Q The authors of this treatise include 20 exposure to asbestos and its association with 21 ovarian cancer in the Inflammation section of 22 risk factors; right? 23 A Correct. 24 Q They go on to say, "This has led to</p>

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<p>1 studies of talc use which is chemically similar 2 to asbestos and can cause an inflammatory 3 response."</p> <p>4 Do you agree with that statement?</p> <p>5 A I -- I actually hesitate a little on 6 that because I'm not so sure that that's a 7 temporal relationship, that it was the asbestos 8 association that then led to the investigation of 9 talc. I don't know, when Dan Cramer published 10 his first paper, that's what was driving him.</p> <p>11 Q Do you have any other disagreement with 12 the -- the statement other than whether it led to 13 the studies of talc use?</p> <p>14 MS. CURRY:</p> <p>15 Object to the form.</p> <p>16 A I don't know. Again, we've covered 17 this. I'm not a mineralogist, so I don't know 18 the similarity issues. And inflammatory response 19 is not defined. So other than that, it's fine.</p> <p>20 MS. THOMPSON:</p> <p>21 Q Well, the authors -- let's take out the 22 asbestos and say "Talc can cause inflammatory 23 response." Do you agree or disagree with that?</p> <p>24 A Well, inflammation is a broad issue and</p>	<p>1 one else anywhere in the literature to question 2 even this, I don't agree with.</p> <p>3 MS. THOMPSON:</p> <p>4 Q Okay. So you -- so you disagree with 5 the authors including that statement in -- in 6 this treatise?</p> <p>7 A I just think it's not defined. They 8 defined it, then I would have felt a lot better. 9 Can cause granulomas inflammatory response. That 10 would have been more accurate.</p> <p>11 Q I can understand that you think it 12 should have been defined better.</p> <p>13 A Yeah.</p> <p>14 Q But do you agree with the statement 15 that's in this treatise, or disagree?</p> <p>16 MS. CURRY:</p> <p>17 Object to the form.</p> <p>18 A No opinion.</p> <p>19 MS. THOMPSON:</p> <p>20 Q But you'll agree that at least these 21 experts thought it was worthwhile putting the 22 statement in this State of the Science treatise 23 on ovarian cancer published in 2016; right?</p> <p>24 MS. CURRY:</p>
<p style="text-align: center;">Page 251</p> <p>1 it's very relevant to this debate, which is are 2 we talking granulomas, acute, chronic but 3 nongranuloma? I think that's a big issue.</p> <p>4 Q Well, these were the authors that were 5 selected because of their expertise to do a State 6 of the Science treatise at the behest of the 7 National Academy of Science and CDC. 8 I'm just asking you do you agree with 9 the statement "Talc can cause an inflammatory 10 response"?</p> <p>11 MS. CURRY:</p> <p>12 Object to the form.</p> <p>13 A And -- and I'm -- I'm answering it.</p> <p>14 MS. THOMPSON:</p> <p>15 Q And you say you don't know? You can't 16 agree or disagree? Is that what you're saying?</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 A The inflammation is not defined. I 20 don't know if the similarity between asbestos and 21 talc. So other than that, I think it's fine. 22 But the -- the -- the implication that all of the 23 ovarian cancer experts are on this -- on this -- 24 on this report and there are no one -- there's no</p>	<p style="text-align: center;">Page 253</p> <p>1 Object to the form.</p> <p>2 A Yeah. Apparently.</p> <p>3 MS. THOMPSON:</p> <p>4 Q Do you know Jason Wright?</p> <p>5 A Division head at Columbia?</p> <p>6 Q Yes.</p> <p>7 A I do know Jason. Not -- I know him by 8 reputation. I don't think I've ever actually met 9 him.</p> <p>10 Q And what is his reputation?</p> <p>11 A I think he's got a good reputation 12 running his division, and he's a good surgeon.</p> <p>13 Q Have you ever published with Jason 14 Wright?</p> <p>15 A I don't believe so.</p> <p>16 Q You're right. That was a trick 17 question.</p> <p>18 I'm gonna mark --</p> <p>19 MS. CURRY:</p> <p>20 I should have objected.</p> <p>21 (DEPOSITION EXHIBIT NUMBER 19 22 WAS MARKED FOR IDENTIFICATION.)</p> <p>23 MS. THOMPSON:</p> <p>24 I'm gonna mark just a short article of</p>

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<p>1 Jason Wright's as Exhibit Number 19. 2 Sorry. I thought I gave you mine. 3 THE WITNESS: 4 We're done with IM? 5 MS. THOMPSON: 6 Q Yeah, I think so. And this was an 7 article published in -- not an article. It's 8 a -- under a practice issue, which I think is an 9 ongoing column, basically, in The Green Journal. 10 What's The Green Journal? 11 A OB-GYN, I think? 12 Q And is that the journal that -- the 13 journal that's published under the ACOG auspices? 14 A I believe so. 15 Q Are you a member of ACOG? 16 A No. 17 Q And this was published in December of 18 2018, about six months ago. And was titled "Best 19 Articles From the Past Year." And the second 20 article listed out of four -- and these were 21 what's new in ovarian cancer -- is the 22 Penninkilampi article published in Epidemiology. 23 A Uh-huh. 24 Q And Dr. Wright concludes that, bottom</p>	<p>1 THE WITNESS: 2 Oh, leaving you in the dust? Sorry. 3 And then the use -- UKC talc studies, 4 it really pales in comparison because -- and I 5 looked at Penninkilampi pretty carefully. It 6 kind of revisited all of the previous data. I 7 think -- I -- I would assume that Jason doesn't 8 necessarily keep up with this literature, so when 9 it came out, he looked at it and said, ah, it's a 10 meta-analysis. But it doesn't bring much to the 11 table, I think. 12 MS. THOMPSON: 13 Q Well, you're obviously speculating as 14 to Dr. Wright's reasoning, because neither -- 15 neither one of us knows. But at least Dr. Wright 16 chose to include this as one of the four best 17 articles regarding ovarian cancer in the past 18 year published in 2018; right? 19 MS. CURRY: 20 Object to the form. 21 A Well, I think he -- I think he -- I 22 think he exposed his reasoning a little bit by 23 the last sentence in the first paragraph. "The 24 possible association with talcum and brain cancer</p>
<p style="text-align: center;">Page 255</p> <p>1 line, "Perineal application of talc is associated 2 with a small increased risk of ovarian cancer." 3 Do you disagree with that conclusion by 4 Dr. Wright? 5 MS. CURRY: 6 Object to the form. 7 A That's his -- I'm trying to figure out 8 where you're reading. It's the bottom-line 9 statement? 10 MS. THOMPSON: 11 Q Bottom line, yes. 12 A Yeah, I would disagree with that. 13 Q Do you disagree with it -- the 14 inclusion of the Penninkilampi meta-analysis as 15 one of the best articles from the past year? 16 MS. CURRY: 17 Object to the form. 18 A You know, it's interesting. I would, 19 actually. I -- when -- when you compare it to 20 Aerial Three and the Carbon Inhibitors and the 21 hypothermic intraperitoneal chemotherapy, which was 22 a New England Journal paper -- 23 MS. THOMPSON: 24 Can you slow down?</p>	<p style="text-align: center;">Page 257</p> <p>1 has attracted media attention, resulting in a 2 number of lawsuits." 3 So I think that's part of the reason he 4 feels this is relevant. Doesn't bring a lot of 5 science. 6 MS. THOMPSON: 7 Q Well, I don't think it was meant to 8 bring science. He was choosing this article for 9 its -- its relevance for the readership of the 10 American College of OB-GYN journal; correct? 11 MS. CURRY: 12 Object to the form. 13 A I would agree with that. 14 MS. THOMPSON: 15 Q Do you have an opinion as to whether 16 talc, the mineral talc, is inert? 17 MS. CURRY: 18 Object to the form. 19 A You have to define "inert." 20 MS. THOMPSON: 21 Q Do you have an opinion as to whether 22 the mineral talc, if it occurs in pure form -- 23 I'll add that as well -- is chemically inert? 24 MS. CURRY:</p>

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<p>1 Object to the form.</p> <p>2 A Chemically inert, meaning -- again, I'm</p> <p>3 struggling with this, that it -- it -- it can</p> <p>4 enter into chemical reaction with other</p> <p>5 substances.</p> <p>6 MS. THOMPSON:</p> <p>7 Q I'd just seen that phrase used, so I</p> <p>8 wanted to see if you had an understanding of what</p> <p>9 it meant and -- and whether it's -- that</p> <p>10 statement would be true.</p> <p>11 A I really would need -- if -- if you've</p> <p>12 seen it said, do you have it so I can look at it?</p> <p>13 Q I've seen it by your -- your fellow</p> <p>14 experts.</p> <p>15 A And -- and what was the context? There</p> <p>16 must have been a context.</p> <p>17 Q And the context was talc is chemically</p> <p>18 inert. Would you have an opinion on that?</p> <p>19 MS. CURRY:</p> <p>20 Object to the form.</p> <p>21 A I think I would say no opinion right</p> <p>22 now.</p> <p>23 MS. THOMPSON:</p> <p>24 Q Okay. Is it biologically inert?</p>	<p>1 MS. CURRY:</p> <p>2 Sorry.</p> <p>3 A That, I don't think I could say with</p> <p>4 confidence.</p> <p>5 MS. THOMPSON:</p> <p>6 Q So even though talc used for</p> <p>7 pleurodesis is biologically -- is not</p> <p>8 biologically inert, you wouldn't be able to say</p> <p>9 whether baby powder was or not?</p> <p>10 A Well, we --</p> <p>11 MS. CURRY:</p> <p>12 Object to the form.</p> <p>13 A Well, we didn't put baby powder into</p> <p>14 the pleural cavities of patients, so we really</p> <p>15 haven't done that.</p> <p>16 MS. THOMPSON:</p> <p>17 Q Would you have any reason to suspect</p> <p>18 that baby powder would behave in a less</p> <p>19 biologically active manner than the talc used in</p> <p>20 pleurodesis?</p> <p>21 MS. CURRY:</p> <p>22 Object to the form.</p> <p>23 A Well, the talc -- you know, the talc</p> <p>24 used in pleurodesis is -- and I'm putting</p>
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<p>1 MS. CURRY:</p> <p>2 Object to the form.</p> <p>3 MS. THOMPSON:</p> <p>4 Q Pure mineral talc. If pure talc</p> <p>5 existed.</p> <p>6 MS. CURRY:</p> <p>7 Object to the form.</p> <p>8 A Huh?</p> <p>9 Okay.</p> <p>10 That's another difficult one. I mean,</p> <p>11 I think that we know talc is used for</p> <p>12 pleurodesis. So that's -- is that a biologic</p> <p>13 process? I think it probably would qualify. So</p> <p>14 I wouldn't call it inert from that standpoint.</p> <p>15 MS. THOMPSON:</p> <p>16 Q And you're not gonna get me to argue</p> <p>17 with that.</p> <p>18 A I don't think so.</p> <p>19 Q Would that opinion apply to Johnson's</p> <p>20 baby powder?</p> <p>21 MS. CURRY:</p> <p>22 Object to the form.</p> <p>23 MS. THOMPSON:</p> <p>24 Q Or do you know?</p>	<p>1 quotations around this -- relatively pure, and</p> <p>2 it's gonna be different than the baby powder.</p> <p>3 But if you're asking me is talc in baby powder, I</p> <p>4 think we can agree on that. And, so, by analogy,</p> <p>5 I would expect some biologic activity.</p> <p>6 MS. THOMPSON:</p> <p>7 Q Okay.</p> <p>8 A Okay.</p> <p>9 Q And same for Shower to Shower?</p> <p>10 MS. CURRY:</p> <p>11 Object to the form.</p> <p>12 A Actually don't even know -- I've never</p> <p>13 seen a Shower to Shower container, but it's the</p> <p>14 product; right?</p> <p>15 MS. THOMPSON:</p> <p>16 Q Do you know what's in Shower to Shower?</p> <p>17 A I'm assuming it's analogous to baby</p> <p>18 powder.</p> <p>19 Q If -- well, would -- would that opinion</p> <p>20 apply to fibrous talc?</p> <p>21 MS. CURRY:</p> <p>22 Object to the form.</p> <p>23 A You know, again, I'm not a mineralogy</p> <p>24 expert, so I'm not going to make a comment on</p>

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<p>1 that.</p> <p>2 MS. THOMPSON:</p> <p>3 Q Do you know what fibrous talc is?</p> <p>4 A I'm not sure I can really define it.</p> <p>5 Q And it's your understanding that</p> <p>6 fibrous talc or talc with asbestiform fibers is</p> <p>7 specifically excluded from the IARC 2010</p> <p>8 monograph? Correct?</p> <p>9 A Say that again, please.</p> <p>10 Q Is it your -- let me rephrase it just a</p> <p>11 little bit. Is it your understanding that</p> <p>12 fibrous talc or talc with asbestiform fibers is</p> <p>13 specifically excluded from the IARC 2010</p> <p>14 monograph?</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A So that's -- asbestiform fibers or</p> <p>18 asbestos?</p> <p>19 MS. THOMPSON:</p> <p>20 Q Asbestiform fibers. Is there a</p> <p>21 difference between fibrous talc and talc with</p> <p>22 asbestiform fibers?</p> <p>23 MS. CURRY:</p> <p>24 Object to the form.</p>	<p>1 A It sounds like it, yes. Habit. It's a</p> <p>2 different definition of habit than I'm used to.</p> <p>3 MS. THOMPSON:</p> <p>4 Q And I think you probably recall when we</p> <p>5 were discussing Health Canada, they were also</p> <p>6 referring to talc, nonasbestiform talc; right?</p> <p>7 MS. CURRY:</p> <p>8 Object to the form.</p> <p>9 A I believe so.</p> <p>10 MS. THOMPSON:</p> <p>11 Q And in the -- let's go ahead and mark</p> <p>12 the 2012 IARC that relates to asbestos.</p> <p>13 (DEPOSITION EXHIBIT NUMBER 20</p> <p>14 WAS MARKED FOR IDENTIFICATION.)</p> <p>15 MS. THOMPSON:</p> <p>16 Q That'd be Exhibit 20. And on the first</p> <p>17 page, 219, "The conclusions" -- reading in the</p> <p>18 first paragraph -- "The conclusions reached in</p> <p>19 this monograph about asbestos and its</p> <p>20 carcinogenic risk apply to these six type of</p> <p>21 fibers wherever they are found, and that includes</p> <p>22 talc-containing asbestiform fibers."</p> <p>23 A Yes.</p> <p>24 Q Is that your understanding of this?</p>
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<p>1 A Again, I -- I -- that's not in my area</p> <p>2 of expertise.</p> <p>3 MS. THOMPSON:</p> <p>4 Q So you don't know --</p> <p>5 A No.</p> <p>6 Q -- whether there's any difference or</p> <p>7 not?</p> <p>8 A I have no opinion.</p> <p>9 Q And -- well, we can look at the 2010 --</p> <p>10 A Uh-huh.</p> <p>11 Q -- monograph to -- to clarify that.</p> <p>12 So on page 277 --</p> <p>13 A Uh-huh.</p> <p>14 Q -- "Talc may also form" -- reading in</p> <p>15 paragraph 3 --</p> <p>16 A Uh-huh.</p> <p>17 Q -- "Talc may also form as true mineral</p> <p>18 fibers that are asbestiform. Asbestiform</p> <p>19 describes the pattern of growth of a mineral that</p> <p>20 is referred to as a habit."</p> <p>21 And you would agree that that is not</p> <p>22 the same as talc with asbestos; right?</p> <p>23 MS. CURRY:</p> <p>24 Object to the form.</p>	<p>1 A I see that. Yeah.</p> <p>2 MS. CURRY:</p> <p>3 Object to the form.</p> <p>4 MS. THOMPSON:</p> <p>5 Q Would your opinions regarding the</p> <p>6 biological activity of baby powder apply as well</p> <p>7 to baby powder that contains asbestos?</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A Not asbestiform but asbestos?</p> <p>11 MS. THOMPSON:</p> <p>12 Q Asbestiform, it -- talc with asbestos</p> <p>13 is talc with asbestos.</p> <p>14 A Okay.</p> <p>15 Q Talc with --</p> <p>16 A So it wouldn't change -- it wouldn't</p> <p>17 change my view.</p> <p>18 Q Okay. And what about baby powder that</p> <p>19 contains heavy metals like chromium, nickel, and</p> <p>20 cobalt?</p> <p>21 MS. CURRY:</p> <p>22 Object to the form.</p> <p>23 A No.</p> <p>24 MS. THOMPSON:</p>

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<p>1 Q And what about baby powder with 2 chemicals that are either possible or known 3 carcinogens, like styrene, coumarin, eugenol, 4 D'Limonine, p-Cresol, muscitone or benzophenone. 5 MS. CURRY: 6 Object to the form. 7 MS. THOMPSON: 8 Q Would it change your opinion regarding 9 the biologic activity of baby powder? 10 A Well, looking at the biologic activity 11 of baby powder, based upon what I reviewed, the 12 answer is no because it doesn't matter what's in 13 that. We looked at the biologic activity. 14 Q So it doesn't matter to you whether 15 there are known carcinogens in baby powder? 16 MS. CURRY: 17 Object to the form. 18 A Well, based upon the studies, then we 19 would have seen convincing evidence of biologic 20 causality. We didn't. 21 MS. THOMPSON: 22 Q And you're referring to the 23 epidemiology studies? 24 MS. CURRY:</p>	<p>1 A Okay. Okay. Thank you. 2 (DEPOSITION EXHIBIT NUMBER 21 WAS 3 MARKED FOR IDENTIFICATION.) 4 MS. THOMPSON: 5 Q This is Exhibit 21, "Asbestos Exposure 6 and Ovarian Fiber Burden." 7 Have you seen this paper, Dr. Birrer? 8 A So I don't think -- let me -- I don't 9 think I reviewed this. Let me just check. 10 Well, it was on my list. I must have. 11 Q And again, just going to the 12 conclusions of these authors, the last paragraph 13 in the abstract. 14 A Uh-huh. 15 Q "This study demonstrates that asbestos 16 can reach the ovary. Although the number of 17 subjects is small, asbestos appears to be present 18 in ovarian tissue more frequently and in higher 19 amounts in women with a documentable exposure 20 history." 21 Do you agree that was the conclusion of 22 the authors? 23 A That's what they state. 24 Q And on page 438, last paragraph, "The</p>
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<p>1 Object to the form. 2 A I'm referring to all of it. 3 MS. THOMPSON: 4 Q Would the presence of known carcinogens 5 provide a plausible mechanism? 6 MS. CURRY: 7 Object to the form. 8 A Mechanisms for -- for what? 9 MS. THOMPSON: 10 Q For possible carcinogenesis. 11 MS. CURRY: 12 Object to the form. 13 A But we didn't see carcinogenesis. 14 There's no plausible biologic association or -- 15 so I'm not sure what we're designing a mechanism 16 for. 17 MS. THOMPSON: 18 Q And are you familiar with the Heller 19 paper regarding the finding of asbestos in human 20 ovaries? 21 A The Heller paper -- 22 Q 1996? 23 A The one we just reviewed or -- 24 Q I'm handing you a new one.</p>	<p>1 fact that exposure to a husband is more 2 significant than exposure to a father suggests a 3 possible role for sexual contact as the 4 transporting vector for asbestos fibers." 5 Would you agree that if sexual -- if 6 sexual contact was a transporting vector, that 7 the fibers would enter the peritoneal cavity and 8 ovaries through the vagina? 9 MS. CURRY: 10 Object to the form. 11 A Just ask that once more, please. 12 MS. THOMPSON: 13 Q That wasn't a very good question. The 14 problem is I don't know exactly how to make it 15 better. 16 If -- if the authors are proposing 17 sexual contact as a possible means for 18 transporting the asbestos fibers into -- into the 19 ovaries, would -- wouldn't you assume that that 20 would be via a vaginal route? 21 A Yeah, I wouldn't assume that. I think 22 one of the challenges here is that there are more 23 differences between a wife and a daughter than 24 just sexual activity. Wives may be in close</p>

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<p>1 contact with their husband in terms of --</p> <p>2 Q But that's not the question I'm asking.</p> <p>3 I'm saying if sexual contact is a</p> <p>4 transporting vector, wouldn't you assume that</p> <p>5 that would be through a vaginal route, not</p> <p>6 inhalation or some other way?</p> <p>7 MS. CURRY:</p> <p>8 Object to the form.</p> <p>9 A If -- if sexual activity was the</p> <p>10 mechanism of transport, is that what you're</p> <p>11 saying?</p> <p>12 MS. THOMPSON:</p> <p>13 Q Right.</p> <p>14 A Yeah.</p> <p>15 It's kind of a non sequitur. I mean,</p> <p>16 you're making the assumption sexual contact, and</p> <p>17 then you're asking, well, if that's it -- if</p> <p>18 that's the mode of transmission, is that the mode</p> <p>19 of transmission. Well, then, you've already</p> <p>20 assumed it, so -- so I could --</p> <p>21 Q Okay. I just wanted to make sure</p> <p>22 you're assuming it because the authors don't</p> <p>23 specifically say, you know, the -- the asbestos</p> <p>24 comes from a perineal exposure --</p>	<p>1 Correct?</p> <p>2 A So it's household contact with men who</p> <p>3 had fairly high exposure. So I think you can</p> <p>4 probably assume it was a substantial amount of</p> <p>5 exposure.</p> <p>6 Q What's your basis for assuming that</p> <p>7 it's a substantial amount of exposure?</p> <p>8 A Well, these men, if they're working in</p> <p>9 the asbestos area, are going to be covered with</p> <p>10 it. That's been shown, which is unfortunate,</p> <p>11 but, yeah.</p> <p>12 Q Can you point me to any study that</p> <p>13 compares how much exposure there would be in a</p> <p>14 talc mine versus a woman using talcum powder on</p> <p>15 her perineum daily or twice daily for -- for</p> <p>16 decades?</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 A Well, this is not talc. This is not</p> <p>20 talc; this is asbestos.</p> <p>21 MS. THOMPSON:</p> <p>22 Q I know. That's a separate question.</p> <p>23 It's not in the article.</p> <p>24 A Okay. Can you ask that again?</p>
<p style="text-align: center;">Page 271</p> <p>1 A Well, they're making -- yeah. They're</p> <p>2 making that distinction between a daughter and --</p> <p>3 Q Yeah, they are. I just wanted to make</p> <p>4 sure we are understanding that.</p> <p>5 And in the conclusions, "In our study,</p> <p>6 the women with a positive exposure history had</p> <p>7 asbestos detected in their ovaries more</p> <p>8 frequently and in higher counts."</p> <p>9 If that did indeed happen, that would</p> <p>10 argue against any kind of laboratory</p> <p>11 contamination, wouldn't it?</p> <p>12 MS. CURRY:</p> <p>13 Object to the form.</p> <p>14 A I'm just checking the numbers. I'm</p> <p>15 sorry.</p> <p>16 9 of 13 household, 6 of 17 and about</p> <p>17 one out of -- one out of 17.</p> <p>18 So, you know, I think -- I think it's</p> <p>19 fair to say that laboratory contamination should</p> <p>20 be more equal in all groups. It doesn't</p> <p>21 completely eliminate it, but...</p> <p>22 MS. THOMPSON:</p> <p>23 Q And these were exposed through</p> <p>24 household contact, not occupational exposure.</p>	<p style="text-align: center;">Page 273</p> <p>1 Q Can you point me to any study that</p> <p>2 compares how much exposure there would be in a</p> <p>3 talc mine versus a woman using talcum powder on</p> <p>4 her perineum daily or twice daily for decades?</p> <p>5 MS. CURRY:</p> <p>6 Object to the form.</p> <p>7 A Yeah. I don't think that's been asked</p> <p>8 and qualified. So it's difficult.</p> <p>9 MS. THOMPSON:</p> <p>10 Q Is the fact that asbestos causes</p> <p>11 pleural and peritoneal mesothelioma relevant to</p> <p>12 whether or not talcum powder can cause ovarian</p> <p>13 cancer?</p> <p>14 MS. CURRY:</p> <p>15 Object to the form.</p> <p>16 A Not to the data that I -- and the</p> <p>17 studies that I reviewed.</p> <p>18 MS. THOMPSON:</p> <p>19 Q And I don't think this was clear to me</p> <p>20 this morning.</p> <p>21 How does asbestos get to the</p> <p>22 peritoneum, in your opinion?</p> <p>23 MS. CURRY:</p> <p>24 Object to the form.</p>

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<p>1 MS. THOMPSON:</p> <p>2 Q Or do you not know?</p> <p>3 A Well, I -- I summarized my</p> <p>4 understanding as not being necessarily an</p> <p>5 asbestos expert, but my clinical experience,</p> <p>6 which is asbestos, obviously, is a risk factor</p> <p>7 for mesothelioma and for lung cancer. If it's</p> <p>8 inhaled, then it's -- it's transiting to the</p> <p>9 pleural cavity, which is where, then, it's</p> <p>10 inducing mesothelioma.</p> <p>11 And then there are peritoneal</p> <p>12 mesotheliomas. And I don't honestly think we</p> <p>13 know precisely how it gets there. There is --</p> <p>14 there is some evidence that pleural activities</p> <p>15 can communicate with peritoneal activities. And</p> <p>16 the example I'd give you on that is if one has</p> <p>17 malignant ascites, fluid in the peritoneal</p> <p>18 cavity, it frequently ends up in the pleural</p> <p>19 cavities.</p> <p>20 So -- so -- but you've got diaphragm</p> <p>21 there with parietal pleura covering it. So</p> <p>22 exactly how that happens, I don't know.</p> <p>23 Q Is migration or transport through the</p> <p>24 genital tract of asbestos a plausible mechanism</p>	<p>1 women who are massively exposed?</p> <p>2 A I think that's the epidemiologic data</p> <p>3 I'm aware of.</p> <p>4 Q You're not aware of the epidemiology</p> <p>5 that includes household or domestic exposure?</p> <p>6 MS. CURRY:</p> <p>7 Object to the form.</p> <p>8 A Secondary exposures?</p> <p>9 MS. THOMPSON:</p> <p>10 Q Correct.</p> <p>11 A Yeah. Yeah. I know that. I know that</p> <p>12 a little bit less than the initial occupational</p> <p>13 exposure. Most -- most of that came from the</p> <p>14 Army.</p> <p>15 Q And you'll agree that you don't have</p> <p>16 any literature that compares what that exposure</p> <p>17 would be compared to an exposure with someone</p> <p>18 using talcum powder on their genitals for --</p> <p>19 A I agree.</p> <p>20 Q -- for an extended period of time?</p> <p>21 A Yes.</p> <p>22 Q So I want to understand. You don't</p> <p>23 know whether asbestos fibers can migrate or be</p> <p>24 transported up the genital tract, but you're</p>
<p style="text-align: center;">Page 275</p> <p>1 for asbestos getting into the peritoneal cavity?</p> <p>2 MS. CURRY:</p> <p>3 Object to the form.</p> <p>4 A Yeah, I don't -- I don't know the</p> <p>5 answer to that. The increased incidence of</p> <p>6 ovarian cancer in asbestos-exposed women, I mean,</p> <p>7 I think it's -- it's agreed upon that those women</p> <p>8 had massive exposures. So --</p> <p>9 MS. THOMPSON:</p> <p>10 Q What -- what's your basis for saying</p> <p>11 those women had massive exposures?</p> <p>12 A Well, my impression is that in gas mask</p> <p>13 manufacturing --</p> <p>14 And, of course, this is in the second</p> <p>15 world war.</p> <p>16 -- there wasn't really an appreciation</p> <p>17 how bad asbestos is. And, so, they got exposed</p> <p>18 to certainly levels that, you know, average</p> <p>19 people would not. And even -- even in towns that</p> <p>20 had cement factories and issues like that, those</p> <p>21 studies were really not all that positive. But</p> <p>22 the gas masks are.</p> <p>23 Q Is it your opinion that the studies</p> <p>24 that link asbestos with ovarian cancer are all in</p>	<p style="text-align: center;">Page 277</p> <p>1 confident that talc cannot. Is that right?</p> <p>2 MS. CURRY:</p> <p>3 Object to the form.</p> <p>4 A Well, that's part of the reason I don't</p> <p>5 think asbestos -- we can't say that. If I</p> <p>6 remember, the question was can -- can the genital</p> <p>7 tract be an explanation for the asbestos fibers.</p> <p>8 In my opinion, no, we don't know that. And the</p> <p>9 data we have from talc suggests, no, that doesn't</p> <p>10 happen.</p> <p>11 MS. THOMPSON:</p> <p>12 Q Still not clear.</p> <p>13 So asbestos, you don't know; but talc,</p> <p>14 you know it doesn't. Is that right?</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A Well, I would say, you know, if you --</p> <p>18 if you want to pursue that, then I would say,</p> <p>19 based upon the talc data, which has actually been</p> <p>20 examined, that it's unlikely that asbestos is</p> <p>21 going up through the genital tract.</p> <p>22 MS. THOMPSON:</p> <p>23 Q So, in your opinion, that is not a</p> <p>24 plausible mechanism for asbestos reaching the</p>

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<p>1 ovaries?</p> <p>2 A Correct.</p> <p>3 Q And what is your explanation for</p> <p>4 household members of asbestos working -- workers</p> <p>5 having an increased risk of ovarian cancer and</p> <p>6 mesothelioma?</p> <p>7 MS. CURRY:</p> <p>8 Object to the form.</p> <p>9 A Well, again, not being an asbestos</p> <p>10 expert, but I would assume this is inhalation,</p> <p>11 much like other exposures to asbestos, and then</p> <p>12 absorption through the lung parenchyma and</p> <p>13 ultimately through this pleural perineal process.</p> <p>14 MS. THOMPSON:</p> <p>15 Q But it's your opinion that the transfer</p> <p>16 or migration of the fibers through coitus is not</p> <p>17 plausible?</p> <p>18 MS. CURRY:</p> <p>19 Object to the form.</p> <p>20 A I don't know the data for that.</p> <p>21 MS. THOMPSON:</p> <p>22 Q Well, you don't know data for the other</p> <p>23 routes either, do you?</p> <p>24 MS. CURRY:</p>	<p>1 lot more data for -- if it's something to do with</p> <p>2 genital transport than you do for other -- other</p> <p>3 methods, but --</p> <p>4 A Well, I am a scientist.</p> <p>5 MS. CURRY:</p> <p>6 Object to the form.</p> <p>7 MS. THOMPSON:</p> <p>8 Q Well, it's selective science.</p> <p>9 MS. CURRY:</p> <p>10 Object to the form and argumentative.</p> <p>11 MS. THOMPSON:</p> <p>12 Q If you are advising a patient, could</p> <p>13 you reassure her that talcum powder containing</p> <p>14 asbestos is safe to use on the perineum?</p> <p>15 A It's -- it's an irrelevant issue.</p> <p>16 Q Okay. Patient says, Dr. Birrer, is it</p> <p>17 safe for me to continue using baby powder on the</p> <p>18 per -- on my perineum. And your answer would</p> <p>19 be?</p> <p>20 A Yes.</p> <p>21 Q And if -- assuming that baby powder</p> <p>22 is -- is shown to contain asbestos, would your</p> <p>23 advice be the same?</p> <p>24 MS. CURRY:</p>
<p>1 Object to the form.</p> <p>2 A Well, there's a lot of literature for,</p> <p>3 you know, shipyard builders where they got</p> <p>4 exposed to asbestos. They get both pleural and</p> <p>5 perineal mesothelioma.</p> <p>6 MS. THOMPSON:</p> <p>7 Q We're talking about household exposure.</p> <p>8 A But again, that's data to tell us,</p> <p>9 under the extreme conditions, where and how that</p> <p>10 might migrate.</p> <p>11 Q Well, but you don't believe Heller, who</p> <p>12 proposed that sexual transmission was a plausible</p> <p>13 route for -- for the asbestos fibers in contacts</p> <p>14 to have a higher incidence of ovarian cancer in</p> <p>15 perineal mesothelioma; right?</p> <p>16 MS. CURRY:</p> <p>17 Object to the form.</p> <p>18 A Well, they didn't say that. They</p> <p>19 didn't say that. They said it's possible.</p> <p>20 MS. THOMPSON:</p> <p>21 Q Okay.</p> <p>22 A They're proposing a hypothesis and I</p> <p>23 said, well, show me the data.</p> <p>24 Q Okay. Well, it seems like you need a</p>	<p>1 Object to the form.</p> <p>2 MS. THOMPSON:</p> <p>3 Q Would your answer be the same?</p> <p>4 A So this is a hypothetical?</p> <p>5 Q Yeah.</p> <p>6 A Powder is the -- is -- is then</p> <p>7 determined to have asbestos?</p> <p>8 Q Correct.</p> <p>9 A Again, so is the question am I</p> <p>10 recommending a patient use asbestos?</p> <p>11 Q Yeah. That's the question.</p> <p>12 A Yeah. No, I wouldn't do that.</p> <p>13 Q Did you read Dr. Longo's report?</p> <p>14 A You know, that came up.</p> <p>15 Can you -- do you have a copy of it to</p> <p>16 refresh my memory?</p> <p>17 Q I do.</p> <p>18 (DEPOSITION EXHIBIT NUMBER 22 WAS</p> <p>19 MARKED FOR IDENTIFICATION.)</p> <p>20 MS. THOMPSON:</p> <p>21 Q I'm gonna mark -- Exhibit 22 is</p> <p>22 Dr. Longo's report in the MDL.</p> <p>23 Exhibit 23 is Dr. Longo's supplemental</p> <p>24 report in the MDL.</p>

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<p>1 (DEPOSITION EXHIBIT NUMBER 23 WAS 2 MARKED FOR IDENTIFICATION.) 3 MS. THOMPSON: 4 Q Do you remember seeing these reports? 5 MS. CURRY: 6 Do you have an extra copy? 7 MS. THOMPSON: 8 I do. 9 MS. CURRY: 10 Thank you. 11 A It's not on my list. 12 MS. THOMPSON: 13 Q Did you ask to see any testing on 14 Johnson's baby powder to see if it contained 15 asbestos? 16 A No, I did not. I think I came across 17 this, actually, previously, but not in this one. 18 Q And understanding that you're -- well, 19 I assume that you're not an expert in asbestos 20 testing; right? 21 A Correct. 22 Q Assuming that -- and if you want to 23 read the report, we can go off the record. 24 But assuming that Dr. Longo found</p>	<p>1 telling a patient it was safe to use baby powder 2 on her genitals if it contained -- if two-thirds 3 of the bottles contained asbestos? 4 MS. CURRY: 5 Object to the form. 6 A You know, again, I'm gonna emphasize 7 this. My review of the data suggests that -- 8 that those products are not a risk for ovarian 9 cancer. 10 MS. THOMPSON: 11 Q I -- I'm clear -- 12 A Regardless of what the hypothetical is. 13 Q I'm clear on that. 14 A Okay. 15 Q But -- but this is not really even a 16 hypothetical. This is testing that has shown 17 two-thirds of the baby powder samples contain 18 asbestos. 19 Do -- would you still feel good about 20 advising a patient that it's safe? 21 MS. CURRY: 22 Object to the form. 23 A I would -- I would tell them that based 24 on my review of the literature, extensive review</p>
<p style="text-align: center;">Page 283</p> <p>1 between 60 and 70 percent of bottles, historical 2 samples provided by Johnson & Johnson over 3 decades to contain asbestos, would that impact 4 how you would advise a patient who says, 5 Dr. Birrer, is it safe for me to use Johnson's 6 baby powder on my perineum? 7 MS. CURRY: 8 Object to the form. 9 A So, again, this -- this gets to the 10 point of having reviewed all the literature in 11 terms of the product, Shower to Shower, 12 Johnson & Johnson's baby powder, as increasing 13 the risk for ovarian cancer showing biological 14 plausibility. 15 Careful review of that literature has 16 shown nothing. So whether there's asbestos in 17 there or not, I don't know. 18 MS. THOMPSON: 19 Q Would -- would it give you pause? 20 MS. CURRY: 21 Object to the form. 22 A Pause. I don't know what pause is. 23 MS. THOMPSON: 24 Q Would you have some concern about</p>	<p style="text-align: center;">Page 285</p> <p>1 of the literature, it is a safe product. 2 MS. THOMPSON: 3 Q And what if they said, Dr. Birrer, is 4 that true even if it does contain asbestos? 5 MS. CURRY: 6 Object to the form. 7 MS. THOMPSON: 8 Q Would your answer be the same? 9 A I would -- I would -- you know, I would 10 say, again, it doesn't matter if that's the way 11 the product was used. And it was careful 12 studies. 13 Q Have you seen any studies from 14 Johnson & Johnson regarding their asbestos 15 testing? 16 A I haven't seen that. 17 Q Were you shown any testing results from 18 Johnson & Johnson? 19 A No. 20 Q Were you shown any testing results from 21 defense experts as to whether baby powder 22 contained asbestos? 23 MS. CURRY: 24 Object to the form.</p>

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<p>1 A Not that I recall, although, as I said 2 before, in the expert witness reports, the ones 3 that involved minerals in asbestos, I went 4 through them fairly rapidly.</p> <p>5 MS. THOMPSON:</p> <p>6 Q Do you know if any defense experts even 7 performed any testing as to whether there was 8 asbestos in baby powder?</p> <p>9 A No.</p> <p>10 Q Do you know -- did you see that 11 Dr. Longo also tested for talc fibers, so-called 12 fibrous talc?</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 A Fibrous talc. I can't quote you that, 16 but I'll rely on you.</p> <p>17 MS. THOMPSON:</p> <p>18 Q Dr. Longo found -- and, you know, feel 19 free to look to that summary -- virtually every 20 Johnson's baby powder and Shower to Shower sample 21 provided from historical samples contained talc 22 fibers. The same answer as to asbestos; it 23 doesn't matter?</p> <p>24 MS. CURRY:</p>	<p>1 A No, I didn't. I see the litigation ad. 2 MS. THOMPSON:</p> <p>3 Q Okay. I'm gonna give you -- I'm gonna 4 mark as Exhibit 24 a report -- call it an article 5 because it's titled "News" -- from BMJ. And 6 what's BMJ?</p> <p>7 A I don't know. I was gonna ask you.</p> <p>8 Q Oh. British Medical Journal. You've 9 heard of the British Medical Journal?</p> <p>10 A Yes. I thought it was Birmingham.</p> <p>11 Q I -- that was another trick question. 12 I said it was a news report from a medical 13 journal.</p> <p>14 And you can take a minute to look 15 through that --</p> <p>16 A Please.</p> <p>17 Q -- since you haven't seen the news 18 reports.</p> <p>19 So you'll, I think, agree with me that 20 the editors didn't come to any conclusions as to 21 whether or not baby powder caused ovarian cancer; 22 right?</p> <p>23 A Correct.</p> <p>24 Q But they -- the editors of the journal</p>
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<p>1 Object to the form.</p> <p>2 A There again, these products that he's 3 analyzing have been used for years. We have the 4 epi data. It's unconvincing. We've got the 5 biologic data. It's definitely unconvincing. 6 The inflammatory theory is inconsistent. So to 7 say anything other than that this is a safe 8 product, I think, is inappropriate.</p> <p>9 MS. THOMPSON:</p> <p>10 Q Are -- are you aware of news reports 11 over the past two or three months of the presence 12 of asbestos in baby powder and 13 Johnson & Johnson's knowledge of the asbestos in 14 baby powder?</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A I'm not.</p> <p>18 (DEPOSITION EXHIBIT NUMBER 24 19 WAS MARKED FOR IDENTIFICATION.)</p> <p>20 MS. THOMPSON:</p> <p>21 Q You haven't seen any news reports about 22 asbestos in baby powder?</p> <p>23 MS. CURRY:</p> <p>24 Object to the form.</p>	<p>1 at least thought it important to -- to report the 2 claims that baby powder may contain asbestos; 3 correct?</p> <p>4 MS. CURRY:</p> <p>5 Object to the form.</p> <p>6 A I think they thought this would be of 7 interest to the readership.</p> <p>8 MS. THOMPSON:</p> <p>9 Q Agreed.</p> <p>10 And you don't think the editors would 11 have published this news report if it wasn't 12 based on what they considered credible evidence, 13 would you?</p> <p>14 MS. CURRY:</p> <p>15 Object to the form.</p> <p>16 A I would -- I would not agree with that 17 statement. I think they would -- they might not 18 agree with any of this or the role of talcum 19 powder or asbestos, but -- but they felt their 20 readership would be interested in this.</p> <p>21 MS. THOMPSON:</p> <p>22 Q So BMJ has become the National Enquirer 23 of medical journals now?</p> <p>24 MS. CURRY:</p>

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<p>1 Object to the form.</p> <p>2 A Medical journals are not above some</p> <p>3 editorial latitude.</p> <p>4 MS. THOMPSON:</p> <p>5 Q And why would the readers be</p> <p>6 interested?</p> <p>7 MS. CURRY:</p> <p>8 Object to the form.</p> <p>9 A Well, I think there -- there is major</p> <p>10 litigation involved. There are a number of court</p> <p>11 cases. The FDA has weighed in a little bit. And</p> <p>12 then there are, quote, internal documents. All</p> <p>13 of that is, for lack of a better word, you know,</p> <p>14 scientists are looking for things to excite their</p> <p>15 lives, so this is entertainment.</p> <p>16 MS. THOMPSON:</p> <p>17 Q Might it be that BMJ thought their</p> <p>18 doctors would want to tell patients about this</p> <p>19 information?</p> <p>20 MS. CURRY:</p> <p>21 Object to the form.</p> <p>22 MR. MIZGALA:</p> <p>23 So now you're --</p> <p>24 MS. THOMPSON:</p>	<p>1 conclusions. You're a physician and you see this</p> <p>2 article. Might it be something that you would be</p> <p>3 interested in so you could advise your patients</p> <p>4 accordingly?</p> <p>5 MS. CURRY:</p> <p>6 Object to the form.</p> <p>7 A Definitely not.</p> <p>8 MS. THOMPSON:</p> <p>9 Q And you would not give a medical</p> <p>10 journal any credit that doctors might want to</p> <p>11 advise their patients that baby powder contains</p> <p>12 asbestos?</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 A I think they do a reasonable job of</p> <p>16 simply reporting what is happening. And they</p> <p>17 talk about -- they talk about internal documents.</p> <p>18 Those are essentially impossible to assess. They</p> <p>19 talk about the New York Times. Not a scientific</p> <p>20 organization. There is some hearsay from the</p> <p>21 FDA. And then they -- they out line the court</p> <p>22 case. I wouldn't -- I would not take this and</p> <p>23 translate it into some recommendation for a</p> <p>24 patient.</p>
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<p>1 Q Just a hunch. Just a hunch.</p> <p>2 MR. MIZGALA:</p> <p>3 Now you're asking him to speculate.</p> <p>4 You've been doing this the whole deposition.</p> <p>5 MS. GARBER:</p> <p>6 I don't think we're doing speaking</p> <p>7 objections. So the objection is to form.</p> <p>8 MR. MIZGALA:</p> <p>9 Yeah. But she's gone to task for</p> <p>10 speculating earlier, and she's doing the same</p> <p>11 thing.</p> <p>12 MS. GARBER:</p> <p>13 Okay. The objection is to form. You</p> <p>14 know that. Let's follow the rules.</p> <p>15 A Say again.</p> <p>16 MS. THOMPSON:</p> <p>17 Q You're a physician that reads journals.</p> <p>18 A Uh-huh.</p> <p>19 Q As a physician, let's -- we're going to</p> <p>20 take a hypothetical that you're not involved in</p> <p>21 talcum powder litigation. Okay?</p> <p>22 A Uh-huh.</p> <p>23 Q And you haven't done this thorough</p> <p>24 review that you have done to come to your</p>	<p>1 MS. THOMPSON:</p> <p>2 Q So it wouldn't be any different from</p> <p>3 reading a story about the Kardashians in BMJ?</p> <p>4 MS. CURRY:</p> <p>5 Object to the form.</p> <p>6 MS. THOMPSON:</p> <p>7 Q Is that what you're saying?</p> <p>8 A You want an answer to that?</p> <p>9 Q Sure. It was a question.</p> <p>10 A Yeah, it's different.</p> <p>11 Q Okay. Thanks.</p> <p>12 A It's about talc.</p> <p>13 Q Are you aware that concerns have been</p> <p>14 raised about the safety of pleurodesis?</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A So, actually, my understanding of</p> <p>18 pleurodesis, at least in the relationship of talc</p> <p>19 in ovarian cancer, there's essentially no</p> <p>20 evidence linking the two. But let me -- let me</p> <p>21 see what you're referring to.</p> <p>22 MS. THOMPSON:</p> <p>23 Q Well, I was just -- let me ask</p> <p>24 questions first.</p>

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<p>1 A Uh-huh. 2 Q And that was: Are you aware that 3 concerns have been raised about the safety of 4 pleurodesis? 5 MS. CURRY: 6 Object to the form. 7 A No. 8 MS. THOMPSON: 9 Q And have you been -- are you aware -- 10 no, you're not aware of any concerns at all. 11 Let me go ahead and give you Exhibit 12 25. 13 (DEPOSITION EXHIBIT NUMBER 25 14 WAS MARKED FOR IDENTIFICATION.) 15 MS. THOMPSON: 16 Q And this is a letter to the editor. 17 I -- 18 A Uh-huh. 19 Q -- I understand that. It's not a 20 formal study, per se. 21 MS. CURRY: 22 Do you have an extra copy? 23 MS. THOMPSON: 24 Yeah, I do.</p>	<p>1 stating that talc is asbestos-free should not 2 release us from a responsibility to the patient, 3 especially when safe alternatives are available." 4 And the picture is of a talc fiber 5 found in a pleurodesis talc. 6 Does that cause you any concern? 7 MS. CURRY: 8 Object to the form. 9 A It doesn't. To be fair, the entire -- 10 my -- my impression is, although I don't do -- I 11 do pleurodesis for cancer patients, in which 12 case, unfortunately, longevity makes this whole 13 issue moot. But we've moved away from talc for 14 other reasons. It's painful. It doesn't work 15 all the time. We have better agents. So that 16 kind of makes this moot. 17 But, you know, again I think you 18 pointed out appropriately. It's -- they're 19 entitled to their opinions. It's a single 20 article -- it's a single letter, and the studies 21 addressing this are very limited. So I think -- 22 I think they're -- making fairly bold statements 23 on not a lot of data. 24 MS. THOMPSON:</p>
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<p>1 Q Do you know Dr. -- I think it's Ghio. 2 I don't know how it's pronounced. Do you know 3 Ghio and Dr. Roggli? 4 A I don't know either of them. 5 Q And I'll let you read through this. 6 Let's just read that -- I'm gonna read the last 7 paragraph and get your thoughts. 8 A Okay. 9 Q "The assertion that contemporary 10 purified preparations of talc do not contain 11 asbestos, therefore eliminating a risk of 12 mesothelioma, should be closely examined prior to 13 its acceptance for clinical application. The 14 methodology used to confirm the lack of 15 asbestosiform materials in a finished product, 16 (i.e., X-ray diffraction, optical microscopy, and 17 electron microscopy techniques) and its 18 sensitivity must be provided. Even if the 19 product is "asbestos-free," the mechanism of 20 cancer induction by asbestos (i.e., 21 metal-catalyzed radical generation) is similarly 22 pertinent to talc and the occurrence of fibrous 23 forms of the sheet silicate itself raises issues 24 about clearance and long-term safety. Simply</p>	<p>1 Q But you'll agree that this was out of 2 the context of any litigation about baby powder; 3 correct? 4 MS. CURRY: 5 Object to the form. 6 A I would agree on that. 7 MS. THOMPSON: 8 Q What's your understanding of the 9 mechanism by which asbestos causes cancer? 10 MS. CURRY: 11 Object to the form. 12 A Again, I'm not necessarily an expert on 13 this. The association and the risk factor's very 14 clear. I think the present theory -- and I would 15 put it as a theory -- is this is a substance that 16 essentially doesn't dissolve, stays there, or at 17 least is very long-lasting, and then, under those 18 circumstances, causes effectively the 19 transformation of cells that it is in close 20 contact with. And that's -- it includes, of 21 course, lung cancer per se, but also mesothelioma 22 where these particles will sort of stay in the 23 pleural cavity. 24 MS. THOMPSON:</p>

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<p>1 Q Is there anything in that description 2 that you gave that would be different for talc? 3 MS. CURRY: 4 Object to the form. 5 A Well -- 6 MS. THOMPSON: 7 Q And we're speaking in general terms. 8 MS. CURRY: 9 Object to the form. 10 A Talc doesn't do this; right? 11 MS. THOMPSON: 12 Q Well, no. Let's go back. 13 You would agree that talc essentially 14 doesn't dissolve also; correct? 15 MS. CURRY: 16 Object to the form. 17 A It's a mineral. 18 MS. THOMPSON: 19 Q And it stays there; correct? 20 MS. CURRY: 21 Object to the form. 22 A Well, I don't know if it stays there as 23 long as asbestos. You know, if you look at the 24 pleurodesis patients, there's really essentially</p>	<p>1 because I wasn't asked to review that, and -- and 2 my experience is in lung cancer. 3 That process, I think, is still -- is 4 still questionable. And -- and because of that, 5 that -- that process may be specifically 6 associated with asbestos. So to extrapolate that 7 to some other molecule that, oh, by the way, it 8 hangs around for a while, is not acceptable. 9 Q So I understand that you apparently 10 were not asked to consider asbestos. You're a 11 scientist; right? 12 A Yes. 13 Q Did you not have any curiosity about 14 what effects the presence of asbestos in baby 15 powder would have? 16 MS. CURRY: 17 Object to the form. 18 A To be honest, that wasn't the way I 19 approached it. I approached it by looking 20 specifically from the talc standpoint. 21 MS. THOMPSON: 22 Q Okay. 23 A And -- and the studies and then looking 24 at that objectively. And, again, we get back to</p>
<p style="text-align: center;">Page 299</p> <p>1 no increase in ovarian cancer. 2 MS. THOMPSON: 3 Q Well, you've already told us that 4 pleurodesis patients have typically a life 5 expectancy of months, not years. 6 MS. CURRY: 7 Object to the form. 8 A I said in the ones I treat. But in 9 chronic heart failure, those patients have been 10 followed up to 40 years. 11 MS. THOMPSON: 12 Q I would like to see that study, but 13 we'll do that another day. How's that? 14 A I don't know if I'd like another day. 15 Q Let's say -- or -- your next comment, 16 or at least it's very long-lasting. You would 17 agree that -- with that for talc; right? 18 A Uh-huh. Uh-huh. 19 Q And, then, for asbestos, you say it 20 causes effectively the transformation of cells 21 that it's in close contact with. But you don't 22 believe that happens for talc; correct? 23 A Well, again, this may reflect my -- 24 somewhat my ignorance about asbestos per se,</p>	<p style="text-align: center;">Page 301</p> <p>1 this issue of really looking at epidemiologic 2 studies, just use powder, and then some of the 3 studies biologically used it -- use those -- used 4 those products. It -- you know, if there are -- 5 if there are substance X, Y, Z, A, B, and C that 6 are in there that are causing a problem and 7 carcinogenic, it would have shown up in the 8 studies. 9 Q Do you know that initially in the 10 studies, asbestos, no one could prove that 11 asbestos was carcinogenic? 12 MS. CURRY: 13 Object to the form. 14 A Well, no one could prove smoking was 15 carcinogenic either. It takes time. 16 MS. THOMPSON: 17 Q Well, there's two examples then. 18 (DEPOSITION EXHIBIT NUMBER 26 19 WAS MARKED FOR IDENTIFICATION.) 20 MS. THOMPSON: 21 Q I'm going to show you Exhibit 26, a 22 paper by Dr. Mossman. Do you know Mossman? 23 A I do know Dr. Mossman. Not personally. 24 Q You know her by reputation?</p>

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<p>1 A I think we shared classmates about 20 2 years ago.</p> <p>3 Q I -- I won't -- I won't go any further 4 with that one.</p> <p>5 The title of this study is "Mechanistic 6 in vitro studies: What they have told us about 7 carcinogenic properties of elongated mineral 8 particles."</p> <p>9 I think we've already established that 10 that's not a term that you're particularly 11 familiar with. But go ahead and take a minute to 12 look at --</p> <p>13 A 26?</p> <p>14 Q -- that paper.</p> <p>15 And I'm going to just read from the 16 abstract. "In vitro studies using target and 17 effector cells of mineral-induced cancers have 18 been critical in determining the mechanisms of 19 pathogenesis as well as the properties" --</p> <p>20 A Where are you?</p> <p>21 Q The first sentence of the paper, in the 22 abstract.</p> <p>23 A Oh, okay. Thank you.</p> <p>24 Q "In vitro studies" -- we'll start over.</p>	<p>1 Object to the form.</p> <p>2 MS. THOMPSON:</p> <p>3 Q That in vitro studies could be used to 4 test that mechanism in EMPs?</p> <p>5 A And she's --</p> <p>6 MS. CURRY:</p> <p>7 Object to the form.</p> <p>8 A -- she's well respected in this area.</p> <p>9 MS. THOMPSON:</p> <p>10 Q We're going to get to Saed's, Dr. 11 Saed's work in a minute.</p> <p>12 A Okay.</p> <p>13 Q But wouldn't you agree that that's what 14 Dr. Saed started testing in his in vitro studies?</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A I think the expert report and the paper 18 that I read is within this spectrum.</p> <p>19 MS. THOMPSON:</p> <p>20 Q And, just moving down a little bit, 21 maybe two-thirds of the way down, "Comparative 22 studies using chemical carcinogens showed that 23 chemical agents interacted directly with DNA; 24 whereas, long EMPs appeared to be promoters of</p>
<p style="text-align: center;">Page 303</p> <p>1 "In vitro studies using target and 2 effector cells of mineral-induced cancers have 3 been critical in determining the mechanisms of 4 pathogenesis as well as the properties of 5 elongated mineral particles, EMPs, important in 6 eliciting these responses."</p> <p>7 Dr. Mossman is reporting that in vitro 8 studies have been helpful in -- in determining 9 this mechanism; right?</p> <p>10 MS. CURRY:</p> <p>11 Object to the form.</p> <p>12 A Yeah, I think that's what she's saying.</p> <p>13 Yes.</p> <p>14 MS. THOMPSON:</p> <p>15 Q Next sentence, "Historically, in vitro 16 models of mutagenesis and immortalized cell lines 17 were first used to test the theory that EMPs were 18 mutagenic to cells, and genotoxicity, as defined 19 as damage to DNA, often culminating in cell 20 death, was observed in a dose-dependent fashion 21 as responses of many cell types to a number of 22 EMPs."</p> <p>23 Does that sound reasonable?</p> <p>24 MS. CURRY:</p>	<p style="text-align: center;">Page 305</p> <p>1 cancer via a number of mechanisms, such as 2 inflammation, generation of oxidants and 3 instigation of cell division.</p> <p>4 "The multitude of these signaling 5 cascades and epigenetic mechanisms of both lung 6 cancers and mesotheliomas have been most recently 7 studied in normal or telomerase immortalized 8 human cells."</p> <p>9 I believe she's saying -- and I'll ask 10 you if it's correct -- that particles, 11 particularly the elongated particles or fibers, 12 have a different mechanism than what is usually 13 thought of with chemical carcinogens.</p> <p>14 MS. CURRY:</p> <p>15 Object to the form.</p> <p>16 MS. THOMPSON:</p> <p>17 Q Is that a --</p> <p>18 A I think that's --</p> <p>19 Q -- reasonable interpretation?</p> <p>20 A You know, again, we've been down this 21 road a little bit. This is a review article, so 22 she's kind of looking at it globally. But I 23 think that what you describe is one of the, sort 24 of, take-home messages she's implying.</p>

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1	Q	Thank you. I'm honored --	1	MS. THOMPSON:	
2	A	Okay. We're done?	2	Q	Would you agree that some scientists
3	Q	-- to have kind of gotten it right.	3	tend to like one explanation or the other, and	
4	A	We're done?	4	the other scientists liking a different	
5	Q	No.	5	explanation more than the first one?	
6	A	No?	6	MS. CURRY:	
7	Q	But I'm gonna shave 10 minutes off for	7	Object to the form.	
8		that compliment.	8	A	I think that -- I think if you look at
9		And in the paragraph 2, "General	9		the investigators in this field, they'll come at
10		Concepts of Cancer Development," first	10		it, as their expertise, from one direction or the
11		paragraph --	11		other.
12	MS. CURRY:		12		But, you know -- you know, Brook is
13		I'm sorry. The realtime is not --	13		somebody who sees the big picture. I'd like to
14		(Off the record.)	14		think I do, too. So there's some of us who look
15	A	I wouldn't -- we -- can we sort of edge	15		at the whole thing.
16		towards a break at some point?	16	MS. THOMPSON:	
17	MS. THOMPSON:		17	Q	Okay. That's a good explanation.
18	Q	Yeah. Let's just go ahead and just	18		But there are scientists doing credible
19		finish -- almost finished, and then we'll come	19		work that are kind of in both camps?
20		back. That's a good -- good spot.	20	MS. CURRY:	
21		(Technical difficulties with realtime.)	21		Object to the form.
22	MS. THOMPSON:		22	A	I think that's fair.
23	Q	Are we okay going forward for a couple	23	MS. THOMPSON:	
24		questions without the realtime?	24	Q	And then I'm going to that next page.
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1	A	Yes.	1		I just have, I think, one more passage I'd like
2	Q	So in number 2, "General Concepts of	2		to read from this paper and get -- get your
3		Cancer Development."	3		thoughts.
4	A	Uh-huh.	4		The first full paragraph on the second
5	Q	"The development and use of in vitro	5		page of the article, page 63, "The modern day
6		models over time has corresponded with the	6		definition of epigenetic mechanisms has evolved
7		evolution of research and knowledge on cancer	7		over time to encompass the fact that alterations
8		etiology in humans."	8		in the primary structure of DNA do not underlie
9		Would you agree with that statement?	9		most changes in the development of tumors.
10	A	I think so, yes.	10		Accordingly, an epigenetic trait can be a stable
11	Q	Next sentence, "While some scientists	11		inheritable phenotype resulting from changes in a
12		have suggested that the relative contributions of	12		chromosome without alteration in the DNA
13		DNA replications and mutations are overwhelming	13		sequence."
14		drivers of cancer risk, others argue that	14		Do you agree with that statement?
15		experimental and evolutionary data point to	15	MS. CURRY:	
16		tissue microenvironment and epigenetic changes as	16		Object to the form.
17		being key to tumorigenesis."	17	A	It strikes me as a little overstated,
18		Would you agree with that statement?	18		particularly the first part, "...epigenetic
19	MS. CURRY:		19		mechanism evolved over time to encompass the fact
20		Object to the form.	20		that alterations in the primary structure do not
21	A	I think it's a quantitative issue. So	21		underline most changes." That, I -- I'm not sure
22		in some tumors, mutagenesis takes prominence; in	22		where that's coming from.
23		others, the microenvironment is important. And	23		Now, it may be in a single tumor,
24		it's a spectrum.	24		epigenetic is more important than mutation; but

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<p>1 in others, a mutation would be more important. 2 Again, when we treat patients, as you 3 know, we're sequencing everything, and that's not 4 looking at epigenetics. It's looking at 5 mutations. Tumors are riddled with these things. 6 In fact, the problem that we face is what's the 7 driver versus the passenger. 8 MS. THOMPSON: 9 Q So in a particular tumor, either 10 mechanism -- well, it could be either mechanism 11 or both in various amount of contribution. Is 12 that a fair statement? 13 MS. CURRY: 14 Object to the form. 15 A I think it's a fair statement. 16 MS. THOMPSON: 17 Let's take a break. 18 VIDEOGRAPHER: 19 Off the record at 3:26 p.m. 20 (OFF THE RECORD.) 21 VIDEOGRAPHER: 22 We're back on the record at 3:45 p.m. 23 MS. THOMPSON: 24 Q Dr. Birrer, let's talk about Dr. Saed</p>	<p>1 So -- and then he did a fair amount of work on 2 adhesion, pure adhesion. 3 MS. THOMPSON: 4 Q And his adhesion work involved 5 oxidative stress in adhesions, didn't it? 6 A I think he would argue that. I 7 didn't -- it wasn't clear to me from my 8 perspective. But that's a component of what he 9 looked at. The unifying factor for me is that 10 it's gynecologic. 11 Q Okay. 12 A Okay. 13 Q And he has 234 peer-reviewed 14 publications; correct? Oh, no. Take that back. 15 A 136, isn't it? 16 Q 136. I was looking -- 17 A 136. Correct. 18 Q What is oxidative stress? 19 A Well, that's -- that's a biochemical 20 state, if you will, within -- we -- we consider 21 as biologists within cells. It exists in all 22 cells. And it's a balance between ox- -- you 23 know, oxidizing effects and antioxidants. 24 As a term, oxidative, of course, it's a</p>
<p>1 and his research. Okay? 2 A Okay. 3 Q Did you look at Dr. Saed's CV? 4 A I did. 5 Q I'll go ahead and mark that as exhibit 6 27. 7 (DEPOSITION EXHIBIT NUMBER 27 WAS 8 MARKED FOR IDENTIFICATION.) 9 A Thank you. 10 MS. THOMPSON: 11 Q And looking at his CV, would you agree 12 that the focus of his lab has been the study of 13 oxidative stress and its biological effects? 14 MS. CURRY: 15 Object to the form. 16 A Let me refresh my -- refresh my memory 17 on this a little bit. 18 So I think, you know, looking at, if I 19 recall correctly -- I would say that he -- one of 20 his -- one of the components of what he looks at 21 is oxidative stress. If you look at his career, 22 he's been fairly broadly over a broad number of 23 topics. He's looked at, like, gene amplification 24 in certain tumors, mostly in GYN, I might add.</p>	<p>1 chemistry definition. But this one, I think what 2 he means by oxidative stress is it's -- or what 3 you're implying is it's a biologic process. 4 Okay? 5 Q And is it fair to say that at least 6 some scientists believe that oxidative stress 7 plays a role in the etiology of many types of 8 cancers? 9 MS. CURRY: 10 Object to the form. 11 A I think it's safe to say oxidative 12 stress has been investigated and associated with 13 some cancers. 14 MS. THOMPSON: 15 Q Okay. Do you have an opinion on the 16 role of oxidative stress in the initiation of 17 ovarian cancer? 18 A I think that's unresolved at this 19 point. Most of the data that I know of for 20 oxidative stress, a lot of the data is in ovarian 21 tumors. They're already established. 22 Q Are -- would you say there are 23 scientists on both sides of that issue? 24 MS. CURRY:</p>

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<p>1 Object to the form.</p> <p>2 A Would you define that, please?</p> <p>3 MS. THOMPSON:</p> <p>4 Q The importance of oxidative stress in</p> <p>5 the pathogenesis of ovarian cancer.</p> <p>6 MS. CURRY:</p> <p>7 Object to the form.</p> <p>8 A I think it's an area of active</p> <p>9 investigation.</p> <p>10 MS. THOMPSON:</p> <p>11 Q Okay. So you would agree that</p> <p>12 researchers who believe that oxidative stress</p> <p>13 plays a role in the initiation or progression of</p> <p>14 ovarian cancer are not unreasonable?</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A It's a generalization that I can't</p> <p>18 comment on. Which researchers?</p> <p>19 MS. THOMPSON:</p> <p>20 Q Okay. But they wouldn't automatically</p> <p>21 be unreasonable?</p> <p>22 MS. CURRY:</p> <p>23 Object to the form.</p> <p>24 A Because they believe --</p>	<p>1 A Yeah.</p> <p>2 Q Let's go to your report.</p> <p>3 A We're done with the CV?</p> <p>4 Q I think so.</p> <p>5 A Are you going to the report or the</p> <p>6 paper?</p> <p>7 Q I'm going to your report first.</p> <p>8 A Yeah. Okay.</p> <p>9 Q And then the report, I'll probably go</p> <p>10 to the -- this paper next.</p> <p>11 So in your report, going to page --</p> <p>12 actually, let's start on page 19.</p> <p>13 A Uh-huh.</p> <p>14 Q And you have the big heading, Section</p> <p>15 4 --</p> <p>16 A Uh-huh.</p> <p>17 Q -- Dr. Saed's Plaintiff-Funded</p> <p>18 Research.</p> <p>19 Did you write that heading?</p> <p>20 A Yes.</p> <p>21 Q What is the basis for calling</p> <p>22 Dr. Saed's research plaintiff-funded?</p> <p>23 A My understanding is after he submitted</p> <p>24 his -- the preprint said -- revealed,</p>
<p style="text-align: center;">Page 315</p> <p>1 MS. THOMPSON:</p> <p>2 Q Because they believe in the importance</p> <p>3 of oxidative stress.</p> <p>4 A I don't think so.</p> <p>5 Q They wouldn't automatically be</p> <p>6 credible -- not credible?</p> <p>7 MS. CURRY:</p> <p>8 Object to the form.</p> <p>9 A That would depend on the work they've</p> <p>10 done --</p> <p>11 MS. THOMPSON:</p> <p>12 Q Okay.</p> <p>13 A -- in their experiments.</p> <p>14 Q All right. And they wouldn't</p> <p>15 automatically be uninformed. Would you agree</p> <p>16 with that?</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 MS. THOMPSON:</p> <p>20 Q It would depend?</p> <p>21 A We need to look at their -- their</p> <p>22 scientific investigation to determine if they're</p> <p>23 uninformed.</p> <p>24 Q Okay.</p>	<p style="text-align: center;">Page 317</p> <p>1 essentially, nothing, and then the actual paper,</p> <p>2 I believe, said that he was -- that he was a</p> <p>3 consultant and an expert witness.</p> <p>4 Q Does that mean to you plaintiff-funded</p> <p>5 research?</p> <p>6 A Well, I mean, that was a separate</p> <p>7 issue, that there was money actually flowing into</p> <p>8 his lab.</p> <p>9 Q What -- what is your basis for saying</p> <p>10 there was money flowing into his lab?</p> <p>11 A I think that's what we -- I saw in</p> <p>12 his -- let me see. Hang on -- his deposition.</p> <p>13 Q What did his deposition say about that?</p> <p>14 A I'd have to refresh my memory. Do you</p> <p>15 have it?</p> <p>16 Q Do you recall that the funding for the</p> <p>17 research came from his university lab funds and</p> <p>18 that he was paid for his time as a consultant?</p> <p>19 Does that sound right?</p> <p>20 MS. CURRY:</p> <p>21 Object to the form.</p> <p>22 A I think I remember that the exchange</p> <p>23 was he was saying his departmental monies and</p> <p>24 then he was asked, okay, where does that come</p>

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<p>1 from, and he couldn't answer that and said, well, 2 I don't know. And the problem is -- 3 MS. THOMPSON: 4 Q That's -- that's just not right. 5 A Okay. Can we look at it? 6 Q And I don't have his deposition here. 7 But to put as your heading "Dr. Saed's 8 Plaintiff-Funded Research" without really knowing 9 the situation is -- doesn't sound like something 10 you would write in a paper. 11 MS. CURRY: 12 Object to the form. 13 A No. 14 MS. THOMPSON: 15 Q Does it? 16 A In a peer-review paper? 17 Q Right. 18 A No. But this is not a peer-review 19 paper. 20 Q Well, did you not -- 21 A The fact that he has plaintiff-funded 22 research and hasn't really revealed it is a huge 23 issue. 24 Q What -- what's your basis for saying he</p>	<p>1 A Yeah. 2 Q -- the published manuscript. 3 (DEPOSITION EXHIBIT NUMBER 28 4 WAS MARKED FOR IDENTIFICATION.) 5 MS. THOMPSON: 6 Q Have you seen that? 7 A I have seen this, yes. 8 Q And you're talking about the conflict 9 of interest statement; correct? 10 A Yes. 11 Q Doctor -- I'm sorry. Exhibit 28 is his 12 manuscript. 13 And the declaration of conflicting 14 interests. 15 A Uh-huh. 16 Q "Dr. Saed has served as a paid 17 consultant and expert witness in the talcum 18 litigation." 19 Is -- is that a reason to make the 20 heading of your report "Dr. Saed's 21 Plaintiff-Funded Research"?" 22 MS. CURRY: 23 Object to the form. 24 A Well, I think -- so I guess the</p>
<p>1 hasn't revealed it? 2 A It's not on the manuscript. 3 Q The manuscript that's published? 4 A Yeah. 5 Q Well, let's look at the manuscript. 6 So is your criticism that it's not on 7 the manuscript or that it's plaintiff-funded 8 research? 9 MS. CURRY: 10 Object to the form. 11 A Well, it's two. Yeah. 12 MS. THOMPSON: 13 Q Because there's nothing in that heading 14 that says this research -- I just -- I just don't 15 understand the heading "Dr. Saed's 16 Plaintiff-Funded Research." 17 A So I think there's two components 18 there. One is I think it is an issue that -- 19 that there's dollars flowing to do some of that 20 research. I think that raises an issue of how 21 objective he is. 22 And then a second issue is at a minimum 23 it should be revealed. 24 Q Now, this is --</p>	<p>1 question is: Is this accurate? This was not on 2 the preprint. This was not on the -- 3 MS. THOMPSON: 4 Q This is what's published; right? 5 A That's not a preprint. 6 Q Do you know what correspondence 7 Dr. Saed -- or what -- what are you speaking of? 8 The submission to -- 9 A The paper was submitted to GYN ONC and 10 rejected, and then the paper was submitted to -- 11 this is Reproductive Sciences. And those -- 12 again, do we have a copy of that? I got the 13 preprint which stated -- which said none of that. 14 Q Okay. We'll get to that in a minute. 15 A This was only put on afterwards. 16 Q Do you have any -- do you have any 17 knowledge of the conversations that Dr. Saed had 18 with the editors of either journal as to what 19 should go on his conflict of interest statement 20 with the situation that he was in? 21 Do you have any knowledge of that 22 whatsoever? 23 A Verbal conversations. 24 Q Written and verbal conversations.</p>

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<p>1 A So verbal conversations, I don't know. 2 I'm not there. The written interactions between 3 the journals, we had copies of. 4 Q And you think what you saw was 5 sufficient enough for you to state "Dr. Saed's 6 Plaintiff-Funded Research" in this report? 7 A I think so, yeah. It's a big issue. 8 Q Wouldn't a scientist want to look at 9 the research before they call it plaintiff-funded 10 research? 11 MS. CURRY: 12 Object to the form. 13 MS. THOMPSON: 14 Q Doesn't that automatically indicate 15 that you think the research is biased? 16 A Well, again, I -- so as this document 17 evolved, I looked at the science and I -- I was 18 chagrinned. That then put this into context. I 19 think -- I think it's a concern. 20 Q Well, couldn't you have just said 21 "Dr. Saed's Research" and then written your 22 comments without making the heading 23 "Plaintiff-Funded Research"? 24 MS. CURRY:</p>	<p>1 actual research in the lab, is that -- 2 A I can't quite -- 3 MS. CURRY: 4 Object to the form. 5 A I can't quite remember. 6 MS. THOMPSON: 7 Q Okay. 8 A But -- 9 Q So -- 10 A It was a big position. 11 Q So do you think that heading is fair? 12 A I think it is. 13 Q Do you remember Dr. Saed's testimony 14 that he would have been -- that he would have 15 been happy to do the same research had 16 Johnson & Johnson approached him on the same 17 topic? 18 MS. CURRY: 19 Object to the form. 20 A I can't remember. Do you have the 21 deposition? 22 MS. THOMPSON: 23 Q I don't. 24 A Okay.</p>
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<p>1 Object to the form. 2 A I could have. 3 MS. THOMPSON: 4 Q Isn't there plenty of research being 5 done that's funded by various entities that's 6 quality research? 7 A So there's a broad spectrum of -- 8 Q Answer my question. Isn't there a lot 9 of research that's being done funded by various 10 entities that's quality research? 11 A As a general statement? 12 Q Uh-huh. 13 A Yes. 14 Q Yes. 15 And funding has to come from somewhere; 16 correct? 17 MS. CURRY: 18 Object to the form. 19 A Can't work without money. 20 MS. THOMPSON: 21 Q And, again, you may not remember this 22 from Dr. Saed's deposition, but his testimony 23 that there was no money coming from the 24 litigation into his lab funds which paid for the</p>	<p>1 Q You don't remember that he said his 2 research would have been the same and he would 3 have been willing to do it for Johnson & Johnson? 4 MS. CURRY: 5 Object to the form. 6 A I can't remember it. 7 MS. THOMPSON: 8 Q To your knowledge, has 9 Johnson & Johnson approached any researcher about 10 doing studies that would help understand whether 11 talcum powder has any molecular effects? 12 MS. CURRY: 13 Object to the form. 14 A He certainly didn't approach me. But 15 I -- I think I recall in the past they've had a 16 J & J-funded study, I think, which was 17 acknowledged on the paper. 18 MS. THOMPSON: 19 Q A molecular study? 20 A I can't say that. 21 Q If you had that, I would certainly like 22 to see it. So, to your knowledge, 23 Johnson & Johnson hasn't asked -- has not asked any researchers to look at the molecular effects</p>

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<p>1 of talcum powder in cell culture?</p> <p>2 A Outside the company, right?</p> <p>3 Q How about inside the company?</p> <p>4 A I don't know. I don't know what goes</p> <p>5 on there.</p> <p>6 Q Did you ask the attorneys --</p> <p>7 A No.</p> <p>8 Q -- if Johnson & Johnson had done any</p> <p>9 studies that you could look at and --</p> <p>10 A No.</p> <p>11 Q -- criticize in the same way you did</p> <p>12 Dr. Saed?</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 A Well, I wouldn't rely on those, the</p> <p>16 internal documents. I would have to know the</p> <p>17 context.</p> <p>18 MS. THOMPSON:</p> <p>19 Q Well, can't you --</p> <p>20 A But this is -- this is peer-reviewed.</p> <p>21 Q Can't you find the context of -- of</p> <p>22 what studies have been done by the company?</p> <p>23 A I think that would be hard.</p> <p>24 Q So it would be of no interest to you</p>	<p>1 A No.</p> <p>2 Q Did you have any conversations by</p> <p>3 email, text or phone with the editors or any</p> <p>4 other representatives of the journal regarding</p> <p>5 this paper?</p> <p>6 A No.</p> <p>7 Q Did you have any conversations with</p> <p>8 Johnson & Johnson regarding the manuscript while</p> <p>9 it was under review?</p> <p>10 A No.</p> <p>11 Q Did you have any conversations with any</p> <p>12 of the reviewers on the paper?</p> <p>13 A I don't know who the reviewers were.</p> <p>14 Q Okay.</p> <p>15 A Yeah.</p> <p>16 Q But you have seen the reviewer comments</p> <p>17 from GYN Oncology; correct?</p> <p>18 A I did.</p> <p>19 Do we have a copy?</p> <p>20 MS. CURRY:</p> <p>21 I think she's --</p> <p>22 MS. THOMPSON:</p> <p>23 Yeah, I'm --</p> <p>(DEPOSITION EXHIBIT NUMBER 29 WAS</p>
<p style="text-align: center;">Page 327</p> <p>1 one way or the other whether Johnson & Johnson</p> <p>2 had done any molecular studies on talcum powder</p> <p>3 and its effect on -- on tissue or cells?</p> <p>4 A Correct.</p> <p>5 MS. CURRY:</p> <p>6 Object to the form.</p> <p>7 A Correct.</p> <p>8 MS. THOMPSON:</p> <p>9 Q When did you -- is the paper that we</p> <p>10 just marked as exhibit --</p> <p>11 A 28.</p> <p>12 Q -- 28, was that paper peer-reviewed?</p> <p>13 A This is a peer-review journal.</p> <p>14 Q And when did you first see the</p> <p>15 unpublished manuscript?</p> <p>16 A I am gonna really -- I'm stretching on</p> <p>17 this. I think it was about -- let's say a month</p> <p>18 or two before this.</p> <p>19 Q Okay. So a couple months ago?</p> <p>20 A Yeah.</p> <p>21 Q Do you review papers for Gynecologic</p> <p>22 Oncology?</p> <p>23 A I do.</p> <p>24 Q Were you asked to review this paper?</p>	<p style="text-align: center;">Page 329</p> <p>1 MARKED FOR IDENTIFICATION.)</p> <p>2 MS. THOMPSON:</p> <p>3 Q I'm gonna go ahead and mark Exhibit 29.</p> <p>4 29 will be the reviewer comments from the journal</p> <p>5 Gynecologic Oncology.</p> <p>6 A Uh-huh.</p> <p>7 Q And again, that journal is the</p> <p>8 journal -- or maybe we haven't discussed this --</p> <p>9 it's the journal for SGO, the Society of</p> <p>10 Gynecologic Oncologists; correct?</p> <p>11 A Correct.</p> <p>12 Q Did I give you a highlighted copy?</p> <p>13 A You did, actually. It's very helpful.</p> <p>14 Q Let me switch that. I'm sure it was.</p> <p>15 Actually, it probably wasn't.</p> <p>16 A I've seen these before.</p> <p>17 (DEPOSITION EXHIBIT NUMBER 30 WAS</p> <p>18 MARKED FOR IDENTIFICATION.)</p> <p>19 MS. THOMPSON:</p> <p>20 Q And then I'm gonna also, at the same</p> <p>21 time, give you Exhibit 30, which is the reviewer</p> <p>22 comments from Reproductive Sciences.</p> <p>23 A All right.</p> <p>24 Q Both are peer-reviewed journals, as you</p>

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<p>1 mentioned; right?</p> <p>2 A Yes. Difference in impact, but both</p> <p>3 peer review.</p> <p>4 Q And they have a -- a different audience</p> <p>5 readership, too, wouldn't you agree?</p> <p>6 A I would agree, yes.</p> <p>7 MS. CURRY:</p> <p>8 Do you have another copy of Exhibit 30?</p> <p>9 MS. THOMPSON:</p> <p>10 Yes. I'm sorry.</p> <p>11 MS. CURRY:</p> <p>12 Thank you.</p> <p>13 MS. THOMPSON:</p> <p>14 That good?</p> <p>15 MS. CURRY:</p> <p>16 Yes.</p> <p>17 MS. THOMPSON:</p> <p>18 Q In your report, you make the statement</p> <p>19 "Unsurprisingly, this manuscript has serious</p> <p>20 methodologic, experimental and analysis flaws."</p> <p>21 A I'm sorry. Are you in the beginning of</p> <p>22 this last paragraph of 19?</p> <p>23 Q No.</p> <p>24 A No?</p>	<p>1 Q Reading the letter to Dr. Saed:</p> <p>2 "Your paper, referenced above, has now</p> <p>3 been reviewed by at least two reviewers -- has</p> <p>4 now been reviewed by at least two experts in the</p> <p>5 field and the editors. Based on the reviewer</p> <p>6 comments, we must inform you that while your work</p> <p>7 is not without merit, we are unable to accept</p> <p>8 your manuscript for publication in Gynecologic</p> <p>9 Oncology. In the last year we have seen a</p> <p>10 significant increase in the number of manuscripts</p> <p>11 submitted to the journal, and, as a result, we</p> <p>12 are now accepting less than 20 percent of the</p> <p>13 manuscripts submitted to the Gynecologic</p> <p>14 Oncology."</p> <p>15 Certainly in that first paragraph there</p> <p>16 were -- there was no language that resembles this</p> <p>17 manuscript has serious methodologic, experimental</p> <p>18 and analysis flaws, is there?</p> <p>19 A No.</p> <p>20 Q The second paragraph, "We have attached</p> <p>21 the comments of the reviewers below in order for</p> <p>22 you to understand the basis for our decision. We</p> <p>23 hope that their thoughtful comments will help you</p> <p>24 in your future studies and possibly with</p>
<p>1 Q It's in another spot. Let me find it.</p> <p>2 A Maybe it's under the paper.</p> <p>3 Q Yeah. Page 24.</p> <p>4 A Yep. Yeah.</p> <p>5 Q "Unsurprisingly, this manuscript has</p> <p>6 serious methodologic, experimental and analysis</p> <p>7 flaws."</p> <p>8 A Uh-huh.</p> <p>9 Q Did you see any language to that effect</p> <p>10 in the peer-reviewers' comments?</p> <p>11 MS. CURRY:</p> <p>12 Object to the form.</p> <p>13 A One second.</p> <p>14 MS. THOMPSON:</p> <p>15 Q Well, let me just ask you.</p> <p>16 Did those words appear in the reviewer</p> <p>17 comments?</p> <p>18 A No, I don't think so.</p> <p>19 Q Okay.</p> <p>20 A Yeah.</p> <p>21 Q So let's -- I want to actually go</p> <p>22 through the reviewer comments. We'll start with</p> <p>23 Gynecologic Oncology.</p> <p>24 A Yep.</p>	<p>1 submission to another journal.</p> <p>2 "Please note that a revised version of</p> <p>3 the current manuscript should not be submitted</p> <p>4 for another review to Gynecologic Oncology."</p> <p>5 There's certainly no language in that</p> <p>6 paragraph that resembles serious methodologic,</p> <p>7 experimental and analysis flaws, is there?</p> <p>8 A No.</p> <p>9 Q And the reviewers actually encouraged</p> <p>10 Dr. Saed to submit the article to another</p> <p>11 journal; correct?</p> <p>12 A Well, this isn't the reviewer. This is</p> <p>13 the editor.</p> <p>14 Q The editor?</p> <p>15 A Yeah.</p> <p>16 Q The editors?</p> <p>17 A Yeah. And this is boilerplate. You'd</p> <p>18 always get this. They're not --</p> <p>19 Q Well, I'm just asking you for the --</p> <p>20 for what the -- what the letter says.</p> <p>21 A Yeah. Yeah.</p> <p>22 Q "The critique of this letter in no way</p> <p>23 implies a lack of interest in this area of</p> <p>24 research and we invite you to submit your future</p>

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<p>1 work to the journal."</p> <p>2 Is that what the letter from</p> <p>3 Dr. Bristow, the editor says?</p> <p>4 A Correct.</p> <p>5 Q And, in fact, Dr. Saed has published</p> <p>6 several times in this journal previously.</p> <p>7 Are you aware of that?</p> <p>8 A Yeah. I believe so, yeah.</p> <p>9 Q So let's go ahead and go through the --</p> <p>10 the reviewer comments. Reviewer number 1 --</p> <p>11 And, as you testified, you don't know</p> <p>12 who these reviewers are; correct?</p> <p>13 A I don't.</p> <p>14 Q Reviewer 1, in his summary of</p> <p>15 Dr. Saed's paper, says "The stated objective of</p> <p>16 the study by Fletcher and colleagues is to</p> <p>17 determine the effects of talc on expression of</p> <p>18 key inflammatory and redox markers in ovarian</p> <p>19 cancer and normal cell lines. Normal ovarian and</p> <p>20 EOC cells were treated with various doses of talc</p> <p>21 for 48 hours. Levels of CA-125 and selected key</p> <p>22 redox enzymes were measured using realtime P --</p> <p>23 RT-PCR and ELISA."</p> <p>24 Is that an accurate statement of what</p>	<p>1 MS. THOMPSON:</p> <p>2 Q Right.</p> <p>3 A Yeah.</p> <p>4 Q "This is an important but controversial</p> <p>5 topic in need of rigorous scientific inquiry."</p> <p>6 Why is this a controversial topic, in</p> <p>7 your mind?</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 MS. THOMPSON:</p> <p>11 Q Or is it a controversial topic to you?</p> <p>12 A I would assume they're referring to the</p> <p>13 potential role of talc in ovarian cancer. But</p> <p>14 I'm -- again, it's speculative.</p> <p>15 Q Okay.</p> <p>16 A I'm guessing.</p> <p>17 Q So you wouldn't know why it would be</p> <p>18 considered controversial?</p> <p>19 MS. CURRY:</p> <p>20 Object to the form.</p> <p>21 A No. Not -- not in -- no, vis-à-vis</p> <p>22 from what the reviewer's saying.</p> <p>23 MS. THOMPSON:</p> <p>24 Q "The current in vitro study does" --</p>
<p>1 the objective of the study was?</p> <p>2 MS. CURRY:</p> <p>3 Object to the form.</p> <p>4 A I think that's -- I think that's a</p> <p>5 little terse, but it covers the bases.</p> <p>6 MS. THOMPSON:</p> <p>7 Q And then beginning with the reviewer</p> <p>8 comments, reviewer number 1 says "Overall, this</p> <p>9 is a well-written manuscript and the conclusions</p> <p>10 are supported by the results."</p> <p>11 Do you disagree with that comment by</p> <p>12 reviewer number 1?</p> <p>13 A That's very generous. I don't agree</p> <p>14 with it. Particularly the latter part.</p> <p>15 Q But at least that's what the</p> <p>16 reviewer --</p> <p>17 A Correct.</p> <p>18 Q -- who was -- you would think was</p> <p>19 chosen because of their expertise in the field,</p> <p>20 those are the reviewer comments regarding</p> <p>21 Dr. Saed's paper; correct?</p> <p>22 MS. CURRY:</p> <p>23 Object to the form.</p> <p>24 A For reviewer 1.</p>	<p>1 reading on, "The current in vitro study does</p> <p>2 provide novel information, but there are also</p> <p>3 some important limitations described below."</p> <p>4 Would you agree that it's common to</p> <p>5 have a back-and-forth with a reviewer and author</p> <p>6 before publication of a paper?</p> <p>7 MS. CURRY:</p> <p>8 Object to the form.</p> <p>9 A Some papers are accepted de novo, but</p> <p>10 it's unusual. Usually there are criticisms and,</p> <p>11 then you'd have to revise. Sometimes if it's</p> <p>12 Cancer Cell, it goes back and forth for two</p> <p>13 years.</p> <p>14 MS. THOMPSON:</p> <p>15 Q The reviewer number 1 in -- in the</p> <p>16 bullet point number 1, said "The significance of</p> <p>17 the study would be greatly enhanced if a mouse</p> <p>18 model corroborated the cell line findings."</p> <p>19 I would -- I'm guessing you're gonna</p> <p>20 agree with that statement?</p> <p>21 A I do.</p> <p>22 Q But you would also agree, I think, that</p> <p>23 oftentimes you -- a researcher would start with</p> <p>an in vitro study; correct?</p>

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1	A	Frequently.		
2	MS. CURRY:			1 I'm not done with my response.
3		Object to the form.		2 So let me finish the first statement.
4	MS. THOMPSON:			3 Q Okay.
5	Q	And what would the reasons for that be?		4 A I think if you could show a phenom- --
6	A	It's usually easier.		5 if you could show the biologic effects in a mouse
7	Q	Less costly?		6 model, then it's much stronger data, regardless
8	MS. CURRY:			7 of the cell lines.
9		Object to the form.		8 I don't -- I would agree I don't think
10	A	By definition.		9 Dr. Saed said much about CA-125 being -- being
11	MS. THOMPSON:			10 involved in ovarian cancer development, and
12	Q	And could be completed in less time?		11 that's the point. I don't understand, and I
13	MS. CURRY:			12 think a lot of other of us who have looked at
14		Object to the form.		13 this, don't understand what the value is of the
15	A	Usually, yeah.		14 increase in CA-125.
16	MS. THOMPSON:			15 Q Do you know that when Dr. Saed
17	Q	Do you -- do you have any idea or		16 presented the initial data at the meeting, that
18		knowledge of what experiments Dr. Saed is		17 the attendees requested that he perform CA-125
19		currently doing in the -- in the area of talcum		18 and that's why he performed it? Do you remember
20		powder and its biologic effects?		19 seeing that in his deposition?
21	MS. CURRY:			20 MS. CURRY:
22		Object to the form.		21 Object to the form.
23	A	I don't.		22 A I didn't see that. Which meeting was
24	MS. THOMPSON:			23 this? Do you know?
				24 MS. THOMPSON:
			Page 339	Page 341
1	Q	In this reviewer's opinion, "The cell		1 Q SRI, 2018.
2		line studies alone and the increase in CA-125,		2 A Okay.
3		while intriguing, are not sufficiently		3 Q Society of Reproductive Investigators.
4		convincing."		4 A And did they indicate -- anybody
5		Would you agree with that statement?		5 indicate what the purpose of that was?
6	A	Absolutely.		6 Q I can't tell you that.
7	Q	And so a mouse model corroboration of		7 But, listen, I'm -- I'm just reading
8		the findings would be -- would enhance the		8 the reviewer's comments --
9		results; correct?		9 A Yeah.
10	A	Not from my perspective. And I'm not		10 Q -- without either one of us trying to
11		so sure this reviewer's implying that. I think		11 speculate on what he means.
12		there's a real question anything can be		12 But the statement is "The significance
13		interpreted from the cell line studies, and any		13 of this study would be greatly enhanced if a
14		increase in CA-125 is meaningless because CA-125		14 mouse model corroborated the cell line findings."
15		is a marker.		15 So there were cell line findings to be
16		So I think --		16 corroborated; correct?
17	Q	Well, wait a minute.		17 A Correct.
18		Did Dr. Saed say anything about		18 Q The reviewer number 1 also said "The
19		CA-125 --		19 significance of SNP alterations" -- that's SNP,
20	MS. CURRY:			20 all capitalized -- "should be further clarified."
21		Are you done with your response?		21 And I think you would agree with that;
22	MS. THOMPSON:			22 correct?
23	Q	-- being the significance with the		23 MS. CURRY:
24		findings?		24 Object to the form.

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1	A I strongly agree with that.	1 Object to the form.
2	MS. THOMPSON:	2 A And it's -- and it's -- I don't know --
3	Q And the viewer -- reviewer commented,	3 just one comment that it's more detailed, which
4	4 "The first bulleted highlight, Oxidative Stress,	4 makes someone like me as a third party look at
5	5 is a key mechanism to the initiation and	5 and say, well, they actually read the paper. I'd
6	6 progression of ovarian cancer is not supported by	6 worry a little about if reviewer 1 didn't read it
7	7 this investigation and should be omitted."	7 carefully enough.
8	8 Does the reviewer comment on why that	8 MS. THOMPSON:
9	9 should be -- that line should be omitted, other	9 Q But you have no idea what he did?
10	10 than it wasn't supported by this investigation	10 A I've been speculating all day.
11	11 with talcum powder?	11 Q Okay. All right. And then the first
12	12 A No. It would be speculative. It's --	12 sentence of reviewer number 2, "While the authors
13	13 it's as you read it.	13 compellingly show changes in several key enzymes
14	14 Q Okay. Do you know that -- that	14 recognizing redox potential in cells exposed to
15	15 virtually that exact statement has been published	15 talc, their data do not show, despite the
16	16 in this same journal in the past by Dr. Saed and	16 author's claim, any evidence that these cells are
17	17 others?	17 transformed."
18	18 MS. CURRY:	18 Do you agree with reviewer number 2 in
19	19 Object to the form.	19 that statement?
20	20 A As a stand-alone statement?	20 A I agree.
21	21 MS. THOMPSON:	21 Q Second sentence, "Specifically, no
22	22 Q Yeah. Yes.	22 experiments documenting changes in cell survival
23	23 A Yeah. I don't think that addresses	23 proliferation are resistant to apoptosis have
24	24 what the reviewer is saying.	24 been performed."
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1	Q Yeah.	1 And that's correct; right?
2	A The reviewer's saying it's not	2 A So he does show what he thinks is
3	3 supported by --	3 proliferation, if I recall correctly. I believe
4	4 Q And that's the point I was trying to	4 it's an MMT -- MTT assay.
5	5 make.	5 Q Well, those experiments were done
6	6 So -- so you would agree that it	6 following reviewer number 2's recommendation. Is
7	7 doesn't sound like it's the statement that's at	7 that your understanding?
8	8 issue; it's whether the talcum powder studies are	8 A Well, I --
9	9 supportive of that statement?	9 Q In the --
10	10 MS. CURRY:	10 A Yeah.
11	11 Object to the form.	11 Q In the first manuscript. Do you
12	12 A Well, the way it's phrased here -- the	12 remember that?
13	13 way it's phrased here, I agree. Yeah.	13 A You could be right. I don't have it
14	14 MS. THOMPSON:	14 pre- -- I don't have that version in front of me.
15	15 Q Let's go to reviewer number 2.	15 Q You may have to just take my word for
16	16 A Uh-huh.	16 that.
17	17 Q And reviewer number 2 gives a similar	17 MS. CURRY:
18	18 summary, perhaps with a little more detail.	18 I have a copy of it if you need it.
19	19 A Yeah.	19 MS. THOMPSON:
20	20 Q But would you agree it's an accurate	20 No. It's not too -- I don't think it's
21	21 description of what the objectives of the study	21 too much --
22	22 were?	22 A But I can say, in particular, cell
23	23 A It is.	23 survival resistant apoptosis, I don't think has
24	24 MS. CURRY:	24 been effectively performed.

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<p>1 MS. THOMPSON: 2 Object. That didn't answer a question. 3 Nonresponsive. 4 Q Next sentence, "Consequently, neither 5 tumor initiation nor progression is documented in 6 this study as opposed to the statement in 7 highlight number 1 and elsewhere." 8 "While changes in redox potential play 9 an important role in tumor biology in general, 10 the present data are insufficient to back up the 11 claim that talc is central to the development of 12 ovarian cancer." 13 Did Dr. Saed make a claim that talcum 14 is central to the development of ovarian cancer, 15 that you recall? 16 A I don't recall him saying that. 17 Q I don't either. 18 "Other comments: The introduction 19 should be better organized with shorter 20 description of the general features of ovarian 21 cancer, replaced by a brief overview of redox 22 proteins in cancer, followed by a discussion of 23 their role in ovarian cancer." 24 That's more a style issue. Would you</p>	<p>1 Q Where in -- where in Dr. Saed's paper 2 does it say this paper shows talcum powder 3 transforms ovarian cells? 4 A Do we have the original? 5 Q We're looking at the published 6 manuscript. 7 MS. CURRY: 8 But the comments are based on the -- 9 A This is the one published in -- and you 10 already told me he changed some of the 11 experiments. 12 MS. THOMPSON: 13 Q Was -- shouldn't your critique be the 14 published paper? 15 A Well, you're asking me to review this; 16 right? 17 Q Okay. We can pull out the -- we can 18 pull out the published manuscript. 19 But certainly in the published paper, 20 there are no claims that cells are transformed, 21 are there? 22 A Well, let's take a look. 23 Q It's certainly not in the abstract or 24 in the conclusion -- in the summary, is it?</p>
<p style="text-align: center;">Page 347</p> <p>1 agree? 2 MS. CURRY: 3 Object to the form. 4 A Make it -- make it more readable, yeah. 5 MS. THOMPSON: 6 Q And, then, the -- finally, "The fact 7 that SNPs were changed following such short 8 exposure to talcum is surprising and makes one 9 wonder what the biological effects of such change 10 might be." 11 And those are the reviewer comments 12 from Gynecologic Oncology; correct? 13 A Correct. 14 Q Did the peer-reviewers raise concerns 15 about Dr. Saed's, in your words, unsubstantiated 16 assumptions? 17 A Well, I -- I think it's implicit in 18 some of the comments. 19 Q That there are unsubstantiated 20 assumptions? 21 A So -- so I think if you read the second 22 paragraph of the second reviewer -- remember, 23 this paper basically says that talc transforms 24 ovarian cancer cells.</p>	<p style="text-align: center;">Page 349</p> <p>1 A I'm just getting through the discussion 2 a little bit. It may be -- may be buried in 3 there or may be an implication that the soft 4 agarose cloning is reflective of only the 5 changes. 6 Q Dr. Saed's paper does not claim that 7 the cells were transformed, does it? 8 A Let me look through it, then. 9 Q Okay. Let's go off the record. 10 VIDEOGRAPHER: 11 Off the record at 4:23 p.m. 12 (OFF THE RECORD.) 13 VIDEOGRAPHER: 14 We're back on the record at 4:24 p.m. 15 A Page 7 on the bottom. "In this study 16 we've shown that talc enhances cellular 17 proliferation, induces inhibition of apoptosis 18 and C-cells" -- 19 MS. CURRY: 20 Gotta go slow for Lois. 21 THE WITNESS: 22 Oh. 23 -- "but, more importantly, in normal 24 cells, suggesting talc is a stimulus to the</p>

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<p>1 development of an oncogenic phenotype."</p> <p>2 MS. THOMPSON:</p> <p>3 Q That doesn't say the cells were</p> <p>4 transformed, does it?</p> <p>5 A I think for those of us in the field</p> <p>6 that implies transformation.</p> <p>7 Q Well, it certainly doesn't state --</p> <p>8 state cells were transformed, as you stated</p> <p>9 earlier.</p> <p>10 MS. CURRY:</p> <p>11 Object to the form.</p> <p>12 MS. THOMPSON:</p> <p>13 Q Did the reviewers have -- raise any</p> <p>14 concerns about serious flaws in methodology?</p> <p>15 A You know, the significance of SNP</p> <p>16 alteration should be further clarified. That's a</p> <p>17 pleasant way of saying I don't understand what</p> <p>18 you're doing.</p> <p>19 Q I'm asking did the peer-reviewers raise</p> <p>20 concerns about serious flaws in methodology?</p> <p>21 MS. CURRY:</p> <p>22 Object to the form.</p> <p>23 A In those terms?</p> <p>24 MS. THOMPSON:</p>	<p>1 MS. CURRY:</p> <p>2 Object to the form.</p> <p>3 A Correct.</p> <p>4 MS. THOMPSON:</p> <p>5 Q And wouldn't that be the flaws in the</p> <p>6 analysis that you're referring to?</p> <p>7 A I don't know what that refers to in</p> <p>8 vis-à-vis my statement.</p> <p>9 Q Did the reviewers state that any of the</p> <p>10 cell line findings appeared to be inaccurate?</p> <p>11 A No.</p> <p>12 Q Did the reviewers state that the wrong</p> <p>13 cell lines were used?</p> <p>14 A No.</p> <p>15 Q Did the reviewers state that the doses</p> <p>16 were inappropriate?</p> <p>17 A No.</p> <p>18 Q Did the reviewers state that the CA-125</p> <p>19 findings were irrelevant?</p> <p>20 MS. CURRY:</p> <p>21 Object to the form.</p> <p>22 A Increase in CA-125 while intriguing are</p> <p>23 not sufficiently convincing to make it relevant</p> <p>24 or not.</p>
<p style="text-align: center;">Page 351</p> <p>1 Q Yes, in those terms.</p> <p>2 A No.</p> <p>3 Q Did the peer-reviewers raise concerns</p> <p>4 about serious flaws in the experiments?</p> <p>5 A In those terms?</p> <p>6 Q Right.</p> <p>7 A No.</p> <p>8 Q Did the peer-reviewers raise serious</p> <p>9 concerns about flaws in the analysis?</p> <p>10 A No.</p> <p>11 Q And, in fact, peer-reviewer number 1</p> <p>12 explicitly stated that "The conclusions are</p> <p>13 supported by the results."</p> <p>14 Right?</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A They rejected the paper.</p> <p>18 MS. THOMPSON:</p> <p>19 Q I -- that wasn't my question.</p> <p>20 The question was -- I mean, my question</p> <p>21 was that the reviewer number 1 specifically</p> <p>22 states "The conclusions are supported by the</p> <p>23 results."</p> <p>24 Correct?</p>	<p style="text-align: center;">Page 353</p> <p>1 MS. THOMPSON:</p> <p>2 Q But the reviewer certainly didn't say</p> <p>3 they're irrelevant?</p> <p>4 A Didn't use those terms.</p> <p>5 Q And intriguing would at least mean that</p> <p>6 the reviewer 1 thought they were of some</p> <p>7 interest. Wouldn't you agree?</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A Some interest. Some interest.</p> <p>11 MS. THOMPSON:</p> <p>12 Q The reviewer did ask for clarification</p> <p>13 of the significance of SNPs. Did the reviewer</p> <p>14 state that the SNP findings were irrelevant?</p> <p>15 A Not in those terms.</p> <p>16 Q Did the reviewer state that the</p> <p>17 methodology used to test for the SNPs was flawed?</p> <p>18 A You know, again, they're seeking</p> <p>19 clarification. That suggests to me that they</p> <p>20 have a problem with the way it was done.</p> <p>21 Wouldn't they --</p> <p>22 Q Did -- did the reviewer state the</p> <p>23 methodology used to test the SNPs was flawed?</p> <p>24 MS. CURRY:</p>

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<p>1 Sorry. You keep cutting off his answer 2 when he's not finished. 3 MS. THOMPSON: 4 Q Were you finished? 5 A Well, I'm just asking what are they 6 trying to clarify? 7 Q I'm just asking you did -- was there a 8 comment that the methodology for testing the SNPs 9 was flawed? 10 MS. CURRY: 11 Object to the form. 12 A They do not say that. 13 MS. THOMPSON: 14 Q Okay. Did the reviewers state that the 15 SNP data was in a accurate? 16 A I don't think they know. It has to be 17 clarified. 18 Q And are you aware that the same SNP 19 data was submitted to SGO as an abstract and 20 recently presented at the annual meeting? 21 MS. CURRY: 22 Object to the form. 23 A The one -- 24 MS. THOMPSON:</p>	<p>1 Q Did the reviewer -- 2 A I hope not. 3 Q Did either reviewer state that the data 4 was poor? 5 MS. CURRY: 6 Object to the form. 7 A Not in that specific term. 8 MS. THOMPSON: 9 Q Let's look at the reviewer from 10 Reproductive Sciences. 11 Are you going to give me yours? 12 A I've got this pretty much memorized. 13 MS. EVERETT: 14 Did we put it back in the folder? Here 15 is one. 16 MS. THOMPSON: 17 Q Okay. And the paper was accepted at 18 Reproductive Sciences. Is that your 19 understanding, since it was eventually published? 20 A Yes. 21 Q Did the reviewers at Reproductive 22 Sciences make any statements regarding flawed 23 methodology, experiments, or analysis? 24 MS. CURRY:</p>
<p style="text-align: center;">Page 355</p> <p>1 Q As opposed to a presentation? 2 A The one in Honolulu -- the one in 3 Honolulu -- 4 Q Yes. 5 A -- Hawaii? Yeah. Yes. 6 Q Did you see that poster? 7 A No. 8 Q Did you speak with the -- the authors 9 of the abstract and the paper? 10 A No. 11 Q Would that have been of interest to you 12 to -- to speak with the researchers? 13 MS. CURRY: 14 Object to the form. 15 A Yeah. So the poster section conflicted 16 with everything else I could do. I didn't see 17 any posters. But I think given my role on this, 18 I probably would not have gone, under any 19 circumstances. 20 MS. THOMPSON: 21 Q Do you have any knowledge as to whether 22 either of these reviewers is a Johnson & Johnson 23 consultant or expert? 24 A I have no -- no idea.</p>	<p style="text-align: center;">Page 357</p> <p>1 Object to the form. 2 A I'm sorry. I only see one reviewer; 3 right? 4 MS. THOMPSON: 5 Q We only have comments from one 6 reviewer. That's correct. 7 A Yeah. And -- and they don't make that 8 comment. 9 Q So I want to just go through Dr. Saed's 10 published paper -- 11 A Uh-huh. 12 Q -- and discuss what was done in this -- 13 just from the materials and methods. We're not 14 in results yet. Okay? 15 So Dr. Saed used the following cell 16 lines: SKOV3, A2780, TOV11 -- or 112D. And 17 those are all ovarian cancer cell lines; correct? 18 A There is significant question about the 19 origin of 2780. 20 Q Okay. 21 A It may -- 22 Q But it is a cancerous cell line? 23 A I would accept that. Yeah. 24 Q Okay. And, then, there are also three</p>

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<p>1 noncancerous cell lines. Agree? The human 2 primary normal ovarian epithelial cells from Cell 3 Biologics Chicago, the human ovarian epithelial 4 cells from Cell Biologics, and the human -- oops. 5 A Immortal one. 6 Q And the immortalized human fallopian 7 tube secretory epithelial cells, FT33, from 8 applied biologic materials. 9 Would you agree those are three 10 noncancerous cell lines? 11 A And when you're defining 12 "noncancerous," you mean they were not isolated 13 from a tumor? 14 Q Correct. 15 A Agree on that. 16 Q Again, just going through the 17 methodology, were the cells grown in media and 18 conditions following manufacturer protocol? 19 MS. CURRY: 20 Object to the form. 21 A I'm not really sure what the 22 manufacturer suggested. But I don't -- I think 23 that the way they were cultured appeared okay to 24 me.</p>	<p>1 MS. CURRY: 2 Object to the form. 3 A I believe so. 4 MS. THOMPSON: 5 Q And using the realtime PCR -- RT-PCR, 6 the -- the following assays were performed. Beta 7 actin for normalization of samples; right? 8 A Yes. 9 Q CAT, SOD3? 10 A Uh-huh. 11 Q GSR, GPX1, NOS2. Are those the tests 12 that were performed with PCR? 13 A Seven -- seven genes. 14 Q Yes. 15 A Including beta actin. 16 Q And -- 17 A Yes. 18 Q And by ELISA, Dr. Saed in his lab 19 tested CAT, SOD, GSR, GPX, NPO, and the CA-125 20 that we've talked about before; correct? 21 A Yes. 22 Q And Dr. Saed -- and those have all been 23 peer-reviewed and published in other studies 24 using ELISA and testing those --</p>
<p>1 MS. THOMPSON: 2 Q Appeared what? 3 A Okay to me. 4 Q Okay. And you'll agree that the cells 5 were seeded and treated with zero, 5, 20, or 100 6 micrograms per mil of baby powder; correct? 7 A This is in Treatment of Cells? 8 Q Yes. 9 A Correct. 10 Q And the -- so the talcum powder was 11 dissolved in DMSO; correct? 12 A I am looking for that. Do you see 13 that? 14 Q It's in Treatment of Cells also. 15 A Oh, okay. 16 Q I went out of order. 17 A Thank you. 18 Q And are you aware that these doses have 19 previously been reported in peer-reviewed 20 literature -- 21 MS. CURRY: 22 Object to -- 23 MS. THOMPSON: 24 Q -- for the study of talc?</p>	<p>1 MS. CURRY: 2 Object to the form. 3 A Yes. 4 MS. THOMPSON: 5 Q -- particular markers? 6 A And Dr. Saed performed the TaqMan SNP 7 genotyping assay on all cell lines; correct? 8 A It's listed there. Yes. 9 Q And those were performed by the Applied 10 Genomics Technology Center At Wayne State 11 University; correct? 12 A Yes. 13 Q And is it your understanding that this 14 is a core facility? 15 MS. CURRY: 16 Object to the form. 17 A That, I don't know. But it could be. 18 MS. THOMPSON: 19 Q What is a core facility? 20 A It's generally a facility that provides 21 standard assays, and everybody shares, and they 22 charge a fee. 23 Q Is there some accreditation of core 24 facilities for quality control?</p>

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<p>1 A Usually it's institutional. In other 2 words, it's not an external group. But a 3 institution won't fund the core unless it's doing 4 decent work.</p> <p>5 Q And Dr. Saed and his researchers then 6 performed the cell proliferation and apoptosis 7 studies using the TACS MTT self-proliferation 8 assay; correct?</p> <p>9 A Yes.</p> <p>10 Q And -- and cast pace 3 after treatment 11 of all the cell lines with the various doses; 12 correct?</p> <p>13 A Yes.</p> <p>14 Q And you'll agree that all of these 15 tests have been performed, peer-reviewed, and 16 published previously by Dr. Saed and others; 17 correct?</p> <p>18 MS. CURRY: 19 Object to the form.</p> <p>20 A I don't know that. But these are 21 reasonably standard.</p> <p>22 MS. THOMPSON: 23 Q These are standardized -- 24 A Yeah.</p>	<p>1 A They're generally accepted. I -- 2 "standardized" is a difficult word because it 3 implies some sort of external review or 4 standardization. And that's not true. These are 5 kits that are -- are bought and then they're 6 implemented in the lab. You still don't know 7 whether it's really being done right, but -- 8 MS. THOMPSON: 9 Q Okay. Well it sounds like -- 10 A -- but -- but -- but they're -- we're 11 familiar with these -- 12 Q Okay. 13 A -- and there's nothing too much out of 14 the box there. 15 Q And before, you said these are 16 standardized, yeah, so I was just going back to 17 that. 18 A Right. 19 Q I think we got the answer. 20 I'm about to start a little bit 21 different area. 22 MS. THOMPSON: 23 Do we want to take a break now or do 24 you want to go for another 30 minutes or so?</p>
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<p>1 Q -- testing methods. 2 All right. Let -- let me just ask that 3 question again because we've got a -- these are 4 standardized testing methods; correct?</p> <p>5 MS. CURRY: 6 Object to the form.</p> <p>7 A I don't know what you mean by 8 "standardized." These are assays that many labs 9 use. They're not being done in -- they're not 10 being done in a central CLIA-approved lab. 11 They're just being done by him and maybe a core 12 lab.</p> <p>13 MS. THOMPSON: 14 Q And I was just asking the question 15 because previously it got chopped into two pieces 16 on these are standardized -- yeah, testing 17 methods, all right. So I was just trying to get 18 a single answer -- 19 A Yes. 20 Q -- was the purpose of that question. 21 So these are standardized testing 22 methods; correct? 23 MS. CURRY: 24 Object to the form.</p>	<p>1 MS. CURRY: 2 How much time do we have left on the 3 record? 4 VIDEOGRAPHER: 5 An hour and seven minutes. 6 MS. CURRY: 7 Do you want to take a final break now? 8 MS. THOMPSON: 9 Yeah. I'll easily finish the rest, I 10 think, in an hour and seven minutes. 11 MS. CURRY: 12 Okay. 13 MS. THOMPSON: 14 Maybe even less. 15 VIDEOGRAPHER: 16 Off the record at 4:39 p.m. 17 (OFF THE RECORD.) 18 VIDEOGRAPHER: 19 We're back on the record at 4:50 p.m. 20 MS. THOMPSON: 21 Q Dr. Birrer, I'd like to do another 22 chart with Dr. Saed's research so I can 23 understand what your opinions are regarding his 24 findings. Okay?</p>

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<p>1 A Okay.</p> <p>2 MS. CURRY:</p> <p>3 And for the record, I object to the</p> <p>4 creation of this chart.</p> <p>5 (DEPOSITION EXHIBIT NUMBER 31 WAS</p> <p>6 MARKED FOR IDENTIFICATION.)</p> <p>7 MS. CURRY:</p> <p>8 What's the exhibit number?</p> <p>9 MS. THOMPSON:</p> <p>10 And this would be Exhibit 31.</p> <p>11 Q And these are the tables taken from</p> <p>12 Dr. Saed's manuscript. Does that looks right?</p> <p>13 If you want to compare, you can.</p> <p>14 A Let me just compare.</p> <p>15 MS. CURRY:</p> <p>16 This the from the published manuscript?</p> <p>17 MS. THOMPSON:</p> <p>18 Q This is from the published manuscript?</p> <p>19 A This is from Figure 1, right?</p> <p>20 Q And -- and you'll agree that these</p> <p>21 charts are generated from the raw data; correct?</p> <p>22 MS. CURRY:</p> <p>23 Object to the form.</p> <p>24 A It appears so.</p>	<p>1 MS. CURRY:</p> <p>2 Object to the form.</p> <p>3 A I assume they are. I mean, in terms of</p> <p>4 they reflect the actual raw data, yeah.</p> <p>5 MS. THOMPSON:</p> <p>6 Q Right. So I'm going to put a Y --</p> <p>7 A Okay.</p> <p>8 Q -- for accurate.</p> <p>9 A Oh. You're looking at all of them?</p> <p>10 Q Oh. Do you have any --</p> <p>11 MS. CURRY:</p> <p>12 Do you have the published paper?</p> <p>13 THE WITNESS:</p> <p>14 I have it here. Right here.</p> <p>15 MS. CURRY:</p> <p>16 What exhibit is that?</p> <p>17 THE WITNESS:</p> <p>18 Yeah. Well, I'll have to say, that</p> <p>19 does look different.</p> <p>20 MS. THOMPSON:</p> <p>21 Q I can -- I'll represent that they were</p> <p>22 cut and pasted from the manuscript. So if they</p> <p>23 are different, it's a --</p> <p>24 MS. CURRY:</p>
<p>1 MS. THOMPSON:</p> <p>2 Q And --</p> <p>3 A Although I would say --</p> <p>4 MS. GARBER:</p> <p>5 Do you have two? Because your</p> <p>6 co-counsel --</p> <p>7 MS. THOMPSON:</p> <p>8 No. That's just one copy, one exhibit.</p> <p>9 A These are -- for instance, the PCR is</p> <p>10 normalized.</p> <p>11 MS. THOMPSON:</p> <p>12 Q Okay. And this chart shows PCR and</p> <p>13 ELISA for antioxidants; right?</p> <p>14 MS. CURRY:</p> <p>15 Object to the form.</p> <p>16 MS. THOMPSON:</p> <p>17 Q The expression of antioxidants and the</p> <p>18 activity of antioxidants CAT and SOV3; correct?</p> <p>19 A Correct.</p> <p>20 Q I want to go through this chart and</p> <p>21 have you tell me "yes" or "no" for each of these</p> <p>22 with each cell line.</p> <p>23 Do you have an opinion as to whether</p> <p>24 these results are accurate?</p>	<p>1 Okay. I'm sorry. I'm having a hard</p> <p>2 time following --</p> <p>3 A But this --</p> <p>4 MS. CURRY:</p> <p>5 -- this because the data represented on</p> <p>6 the exhibit is not reflective of the bar graphs</p> <p>7 that are in the published manuscript.</p> <p>8 So if you can just point us to where in</p> <p>9 the published manuscript you're pulling this</p> <p>10 from.</p> <p>11 MS. THOMPSON:</p> <p>12 All right.</p> <p>13 A This is -- the entire ordinate has</p> <p>14 changed. This is 25. This is 100.</p> <p>15 MS. THOMPSON:</p> <p>16 Q This is -- this is, from the chart,</p> <p>17 this is Figure 1. The color came out a little</p> <p>18 bit differently in the printing process,</p> <p>19 but the --</p> <p>20 MS. CURRY:</p> <p>21 This is not Figure 1.</p> <p>22 A No. Not even close. This is, in fact,</p> <p>23 Figure 3.</p> <p>24 MS. THOMPSON:</p>
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<p>1 Q PCR, CAT, SOD3. CAT activity and SOD 2 activity.</p> <p>3 MS. THOMPSON: 4 Are y'all looking? Mine are identical.</p> <p>5 Can you be --</p> <p>6 MS. CURRY: 7 On the published manuscript, this chart 8 does not represent --</p> <p>9 MS. THOMPSON: 10 To Figure 1?</p> <p>11 MS. CURRY: 12 -- to Figure 1.</p> <p>13 MS. THOMPSON: 14 Let's go off the record.</p> <p>15 VIDEOGRAPHER: 16 Going off the record at 4:55. (OFF THE RECORD.)</p> <p>17 VIDEOGRAPHER: 18 We're back on the record at 4:59 p.m.</p> <p>19 MS. THOMPSON: 20 Q Okay. Now that we've got that 21 straightened out, so you'll agree that this is 22 the -- the chart that shows the expression of 23 antioxidant CAT and SKOV3 and the activity of the</p>	<p>1 MS. CURRY: 2 Object to the form.</p> <p>3 A It could change them considerably, 4 yeah.</p> <p>5 MS. THOMPSON: 6 Q Do you want to change that to a 7 question mark, or do you want to change that to 8 no, they're not accurate?</p> <p>9 MS. CURRY: 10 Object to the form.</p> <p>11 A Question mark will be fine.</p> <p>12 MS. THOMPSON: 13 Q And that would go for all cell lines?</p> <p>14 A Well, the technology -- the techniques 15 used was applied to all of them.</p> <p>16 MS. CURRY: 17 Just so I know what we're doing here -- 18 I'm sorry -- is when you're saying results 19 accurate in these four pictures, are -- are you 20 talking about -- like is that based on raw data 21 that's supposed to be in here? I'm just not sure 22 what we're doing.</p> <p>23 MS. THOMPSON: 24 These graphs are from the raw data.</p>
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<p>1 same; correct?</p> <p>2 A You're on Figure 1?</p> <p>3 Q I am on Figure 1, yes.</p> <p>4 A Yeah. That's CAT and SKOV3?</p> <p>5 Q Yeah.</p> <p>6 A Yep.</p> <p>7 Q And we -- we are going through each 8 cell line. The first column was Results 9 Accurate, and I think --</p> <p>10 A So let me -- let me revise that.</p> <p>11 Q Okay.</p> <p>12 A Because now I understand what we're 13 looking at.</p> <p>14 So I think there's a serious problem in 15 the PCR, or at least I'd be concerned by that.</p> <p>16 These PCR mRNA levels were normalized to beta 17 actin. And I think most of us would accept that 18 using one housekeeping gene is not acceptable. I 19 would expect at least two or three to make sure 20 that there isn't a change in the stability of 21 beta actin, which would throw off your 22 quantification levels of those genes.</p> <p>23 Q And do you think that would render 24 these results inaccurate?</p>	<p>1 MS. CURRY: 2 But the raw data, we don't have. That 3 hasn't --</p> <p>4 MS. THOMPSON: 5 You've seen the raw data in the lab 6 notebooks and Dr. Saed has -- is this an 7 objection or is this --</p> <p>8 MS. CURRY: 9 It's an object- -- I'm just honestly -- 10 I'm trying -- you're trying to have him create an 11 exhibit --</p> <p>12 MS. THOMPSON: 13 That's a speaking objection.</p> <p>14 MS. CURRY: 15 -- and I'm trying to find out --</p> <p>16 MS. THOMPSON: 17 If he understands it, it doesn't really 18 matter whether you do or not, Dawn. I mean --</p> <p>19 MS. CURRY: 20 And that's fine if you don't want an 21 accurate record. That's fine.</p> <p>22 MS. THOMPSON: 23 And he hasn't expressed that he doesn't understand.</p>

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<p>1 MS. CURRY: 2 That's fine. 3 MS. THOMPSON: 4 Q Dr. Birrer, do you understand what I'm 5 asking with this chart? If not, I'll explain it. 6 A Well, I -- I think -- it's a little bit 7 like the exercise this morning, which is we're 8 creating a document without all the information. 9 I don't have the raw data here. I mean, yeah, 10 it's in the notebooks, I suppose, somewhere. 11 Q And -- and you'll agree that these 12 charts are generated from raw data by a software 13 program. Correct? 14 A And Dr. Saed testified to that. 15 Q Correct? 16 MS. CURRY: 17 A Object to the form. 18 Q Well, again, depending on what data's 19 put in -- 20 MS. THOMPSON: 21 Q Okay. 22 A -- you could get completely different 23 results. 24 Q I understand. But we're gonna look at</p>	<p>1 A Well, I think the -- if you're gonna 2 call them normal, then the normal primary -- the 3 human primary normal ovarian cell lines would be 4 more relevant. 5 MS. THOMPSON: 6 Q More relevant? But either one would be 7 relevant. Is that what you're saying? 8 MS. CURRY: 9 A Object to form. 10 Q No. I think the immortalized one is 11 not normal, so it wouldn't be relevant. 12 MS. THOMPSON: 13 Q Okay. So we'll make another column. 14 A Well, we don't -- the immortalized and 15 the normal. 16 Q So the immortalized would be not 17 relevant? 18 A Right. 19 Q And the -- 20 A Yes. 21 Q Maybe I should get a clean -- let's -- 22 let's start over this chart. That's okay. I'll 23 make the next one neater. 24 Q Okay. Let's start again. And we're</p>
<p style="text-align: center;">Page 375</p> <p>1 the data that was in the peer-reviewed published 2 paper. Okay? 3 A Are the results relevant? And we can 4 go by each cell line. 5 MS. CURRY: 6 A Object to the form. 7 MS. THOMPSON: 8 Q And yes or no or you don't know. 9 MS. CURRY: 10 A Object to the form. 11 Q Well, one of the challenges in this 12 paper is the purpose of the EL1 cell line. I 13 don't think those results are relevant. 14 MS. THOMPSON: 15 Q Okay. The other lines? 16 A The normal ovary, I would assume -- is 17 that primary cells? Right? We reviewed that? 18 Let me go back. 19 A So I don't know if that's -- I don't 20 know if that's the HOS cell line or the -- the 21 ones from Cell Biologics. 22 Q Is one relevant and one not? 23 MS. CURRY: 24 A Object to the form.</p>	<p style="text-align: center;">Page 377</p> <p>1 A gonna distinguish between -- 2 Q Uh-huh. 3 A -- the immortalized, which is IM on the 4 chart, and that's going to be not relevant; 5 right? 6 Q Correct. 7 A And the normal cells are relevant, in 8 your mind? 9 Q Uh-huh. 10 A How about the fallopian tube, the FT33? 11 A Yeah. So that's immortalized also, so 12 I don't think it's particularly relevant. 13 Q Is it not relevant? 14 MS. CURRY: 15 A Object to the form. 16 Q Uh-huh. 17 MS. THOMPSON: 18 A And that's because it's immortalized? 19 Q Uh-huh. 20 A Okay. And 3, cancer cell lines? 21 A So this is -- 22 MS. CURRY: 23 A Object to the form. 24 Q So this was a big -- this was a concern</p>

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<p>1 in the paper, which is that, as you know, SKOV3 2 is a clear cell; we've got an endometrioid; and 3 we don't even know where 2780 comes from, so I 4 don't think they're relevant.</p> <p>5 MS. THOMPSON:</p> <p>6 Q And that's because of lacking a clear 7 histologic relationship?</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A That's right.</p> <p>11 MS. THOMPSON:</p> <p>12 Q Do those results show a biological 13 effect from talcum powder?</p> <p>14 MS. CURRY:</p> <p>15 Object to the form.</p> <p>16 A So I don't view that -- I don't -- I 17 guess the answer is -- biologic effects?</p> <p>18 MS. THOMPSON:</p> <p>19 Q Does something happen when you put the 20 baby powder in the cell culture?</p> <p>21 MS. CURRY:</p> <p>22 Object to the form.</p> <p>23 MS. THOMPSON:</p> <p>24 Q This is not related to whether you</p>	<p>1 Q As long as you approve of my work, we 2 can -- we can switch the exhibit over to the one 3 I'm doing.</p> <p>4 A Uh-huh.</p> <p>5 Q If the results are accurate, do they 6 demonstrate a dose-dependent response?</p> <p>7 MS. CURRY:</p> <p>8 I object to the entirety of the 9 exercise --</p> <p>10 MS. THOMPSON:</p> <p>11 Okay. You're --</p> <p>12 MS. CURRY:</p> <p>13 -- but I am following you in terms of 14 the accuracy of you putting his answers down on 15 the paper.</p> <p>16 MS. THOMPSON:</p> <p>17 Okay. All right. And we'll have the 18 record, too.</p> <p>19 MS. THOMPSON:</p> <p>20 Q Do the answers show a dose-dependent 21 response?</p> <p>22 MS. CURRY:</p> <p>23 Object to the form.</p> <p>24 A So it depends on the cell line, I</p>
<p style="text-align: center;">Page 379</p> <p>1 agree with how it was, the dosage, whether the 2 results are accurate or not.</p> <p>3 MS. CURRY:</p> <p>4 Object to the form.</p> <p>5 A Yeah. It's really hard to interpret 6 this because, again, I believe he used a control 7 with DMSO. DMSO has fairly dramatic effects and 8 he's not controlling for it. So, you know, I 9 would say no.</p> <p>10 MS. THOMPSON:</p> <p>11 Q No biologic effects?</p> <p>12 A No biologic effects.</p> <p>13 Q On any of the cell lines?</p> <p>14 A Correct. Unless you call PCR effect --</p> <p>15 you know, PCR quantification biologic.</p> <p>16 Q Do you have your exhibit there?</p> <p>17 A Exhibit --</p> <p>18 Q Oh, well. We can -- we'll just use 19 mine.</p> <p>20 A This one?</p> <p>21 Q I wondered if you wanted to be filling 22 these in yourself. But as long as you correct 23 my --</p> <p>24 A You go.</p>	<p style="text-align: center;">Page 381</p> <p>1 think. Right?</p> <p>2 MS. THOMPSON:</p> <p>3 Q Which cell line does not? So --</p> <p>4 MS. CURRY:</p> <p>5 Object to the form.</p> <p>6 A If you look at the PCR, I don't know -- 7 and you look at everything but EL1, I don't know 8 if those are statistically different. If you -- 9 if you pull it down, you can see it.</p> <p>10 MS. THOMPSON:</p> <p>11 Q Oh, sorry.</p> <p>12 A Yeah. See way on the top?</p> <p>13 Q If the paper says they were 14 statistically significant, does that matter?</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A Well, it doesn't look like it to me.</p> <p>18 MS. THOMPSON:</p> <p>19 Q So are you gonna say no or you don't 20 know?</p> <p>21 A No.</p> <p>22 MS. CURRY:</p> <p>23 Object to the form.</p> <p>24 MS. THOMPSON:</p>

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	<p>1 Q On all cell lines?</p> <p>2 A No. For EL1. Normal ovary.</p> <p>3 So, actually, for -- for -- what is</p> <p>4 that? That's B, SKOV3. So for SKOV3, it looks</p> <p>5 like nothing. It's -- from the mRNA level, it's</p> <p>6 all suppressed. It's all very low. I don't</p> <p>7 see -- I don't see -- if there's a P-value there,</p> <p>8 what is it between? The control and the 5? The</p> <p>9 control and the 20? The 20 and the 100? I don't</p> <p>10 know.</p> <p>11 The ELISA looks like -- this is for</p> <p>12 SKOV3; right? The ELISA looks like there's no</p> <p>13 effect until you get to 20 or 100.</p> <p>14 Q And you're eyeballing the statistical</p> <p>15 significance of these charts?</p> <p>16 A Well, that's why they --</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 A That's why they put arrow bars in</p> <p>20 there.</p> <p>21 MS. THOMPSON:</p> <p>22 Q So reading Dr. Saed's results in the</p> <p>23 manuscript --</p> <p>24 A Uh-huh.</p>	<p>1 Q Well, you had the raw data to review,</p> <p>2 didn't you?</p> <p>3 MS. CURRY:</p> <p>4 Object to the form.</p> <p>5 MS. THOMPSON:</p> <p>6 Q It's on your materials considered list.</p> <p>7 A Well, his notebooks were very difficult</p> <p>8 to interpret.</p> <p>9 Q All the raw data was in his notebooks.</p> <p>10 If it -- if you are saying these results were not</p> <p>11 accurate, could you have looked it up in the lab</p> <p>12 notebooks?</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 A Yeah, I don't know. I'd have to go</p> <p>16 back and look at it. There were --</p> <p>17 MS. THOMPSON:</p> <p>18 Q Did you do that?</p> <p>19 MS. CURRY:</p> <p>20 Object to the form.</p> <p>21 A I looked at his notebooks. They were</p> <p>22 extremely hard to follow.</p> <p>23 MS. THOMPSON:</p> <p>24 Q Did you ask someone --</p>
	<p>1 Q -- the CAT and SKOV -- this is Figure</p> <p>2 1 -- "mRNA and protein levels were significantly</p> <p>3 in a dose-dependent manner in talc-treated cells</p> <p>4 compared to controls."</p> <p>5 Do you disagree with Dr. Saed's</p> <p>6 analysis?</p> <p>7 A I disagree with that statement.</p> <p>8 Q So you're going to say, regardless of</p> <p>9 Dr. Saed's peer-reviewed conclusion, your</p> <p>10 opinion, these do not show a dose-dependent</p> <p>11 response --</p> <p>12 MS. CURRY:</p> <p>13 Object to the form.</p> <p>14 MS. THOMPSON:</p> <p>15 Q -- based on your eyeballing of the</p> <p>16 chart?</p> <p>17 MS. CURRY:</p> <p>18 Object to the form. That's --</p> <p>19 A Well, that -- I disagree with that</p> <p>20 statement. That implies that these are all</p> <p>21 statistically significant, and I can't imagine</p> <p>22 that's true, given the arrow bars. But it would</p> <p>23 be very helpful to have the raw data.</p> <p>24 MS. THOMPSON:</p>	<p>1 MS. CURRY:</p> <p>2 Object to the form.</p> <p>3 MS. THOMPSON:</p> <p>4 Q -- to get information? Because what's</p> <p>5 your evidence that the data wasn't included in</p> <p>6 the lab notebooks?</p> <p>7 MS. CURRY:</p> <p>8 Object to the form.</p> <p>9 A Well, I -- again, his notebooks were</p> <p>10 very poorly organized. There were things that</p> <p>11 were whited out. So it was hard to follow.</p> <p>12 MS. THOMPSON:</p> <p>13 Q Okay. What was whited out? Seriously.</p> <p>14 Was there any data whited out?</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 MS. THOMPSON:</p> <p>18 Q You're making --</p> <p>19 A Well, do you have them here?</p> <p>20 MS. THOMPSON:</p> <p>21 Q I do.</p> <p>22 MS. CURRY:</p> <p>23 And the deposition transcript?</p> <p>24 MS. THOMPSON:</p>

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<p>1 I need the lab notebooks. Let's just 2 answer this, and I think we're going to move on 3 to something else.</p> <p>4 Q In your opinion, are the results 5 dose-deponent?</p> <p>6 MS. CURRY: 7 Object to the form.</p> <p>8 A So I -- I guess the way to handle that 9 would be for -- there looks like there's a dose 10 dependency for some of the cell lines in certain 11 conditions but not all of them. Is that fair to 12 say?</p> <p>13 MS. THOMPSON: 14 Q Well, so you don't believe 15 Dr. Saed's --</p> <p>16 A Conclusions.</p> <p>17 Q -- conclusions?</p> <p>18 A I don't agree with that one statement. 19 His statement is that basically all of the time 20 points demonstrated a dose-dependant effect of 21 talc. If that's true -- you can't see it here. 22 You see it in some.</p> <p>23 Q Did -- did any of the peer-reviewers 24 raise a question about that statement?</p>	<p>1 publications using the same methodology and the 2 same assays?</p> <p>3 MS. CURRY: 4 Object to the form.</p> <p>5 A I didn't -- I didn't go through all of 6 his papers, no.</p> <p>7 MS. THOMPSON: 8 Q Did you go through any of his previous 9 papers?</p> <p>10 MS. CURRY: 11 Object to the form.</p> <p>12 A I can't recall going through papers 13 that used this technology.</p> <p>14 MS. THOMPSON: 15 Q But this technology has been 16 peer-reviewed and published --</p> <p>17 MS. CURRY: 18 Object to the form.</p> <p>19 A Yes.</p> <p>20 MS. THOMPSON: 21 Q -- previously?</p> <p>22 And you're aware that Dr. Saed has 23 presented four abstracts based on this research; 24 correct?</p>
<p style="text-align: center;">Page 387</p> <p>1 A No.</p> <p>2 Q And, in fact, the peer-reviewers said 3 his conclusions reflected the results; correct?</p> <p>4 MS. CURRY: 5 Object to the form.</p> <p>6 MS. THOMPSON: 7 Q The peer-reviewer that commented on it?</p> <p>8 A The one reviewer.</p> <p>9 Q The only one that commented on it?</p> <p>10 A Yeah.</p> <p>11 Q So are these question marks or which -- 12 which cell lines do you think are statistically 13 significant?</p> <p>14 A Yeah. I think that's -- I think that's 15 probably reasonable, question marks.</p> <p>16 Q Question marks on everything?</p> <p>17 A Yeah.</p> <p>18 Q And there's plenty of discussion for us 19 to go back and figure out the reasoning for that. 20 We may come back to the chart, but 21 there's some other things I want to cover, so 22 we'll -- we'll leave that with you disagreeing 23 with Dr. Saed's analysis.</p> <p>24 Did you look at Dr. Saed's previous</p>	<p style="text-align: center;">Page 389</p> <p>1 A I believe so.</p> <p>2 Q And abstracts are generally reviewed 3 prior to acceptance at a national meeting; 4 correct?</p> <p>5 MS. CURRY: 6 Object to the form.</p> <p>7 A Usually there's a program committee 8 that will review them.</p> <p>9 MS. THOMPSON: 10 Q And would you agree that, generally, 11 four to six reviewers look at abstracts when 12 making the decision which to accept for a 13 meeting?</p> <p>14 MS. CURRY: 15 Object to the form.</p> <p>16 A It depends on the organization. But 17 there usually is -- it's certainly more than one 18 person.</p> <p>19 MS. THOMPSON: 20 Q If -- if I told you Society For 21 Reproductive Investigation typically has four to 22 six reviewers and SGO has four to five reviewers 23 for each abstract, does that sound reasonable?</p> <p>24 MS. CURRY:</p>

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<p>1 Object to the form.</p> <p>2 A You know, I think for the first</p> <p>3 society, the former one, I'm not familiar with</p> <p>4 them, but it sounds reasonable.</p> <p>5 SGO, I've been on the program</p> <p>6 committee. Sometimes it's a little less than</p> <p>7 that depending on how many abstracts you get.</p> <p>8 MS. THOMPSON:</p> <p>9 Q At least for this year, there were four</p> <p>10 to five reviewers, and the abstracts were scored</p> <p>11 numerically.</p> <p>12 Are you familiar with that system?</p> <p>13 MS. CURRY:</p> <p>14 Object to the form.</p> <p>15 A I am.</p> <p>16 MS. THOMPSON:</p> <p>17 Q And the -- and the top scoring</p> <p>18 abstracts were accepted for presentation?</p> <p>19 A Usually they'll put a cutoff on it,</p> <p>20 yeah.</p> <p>21 Q And in the two criteria that SGO</p> <p>22 reviewers looked at were, one, scientific</p> <p>23 validity; and two, clinical relevance.</p> <p>24 Does that sound right?</p>	<p>1 You would agree with me that there have</p> <p>2 been at least 20 to 30 eyes on this research;</p> <p>3 correct?</p> <p>4 MS. CURRY:</p> <p>5 Object to the form.</p> <p>6 MS. THOMPSON:</p> <p>7 Q In various levels of review.</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A 20 to 30 sounds a little excessive but</p> <p>11 probably --</p> <p>12 MS. THOMPSON:</p> <p>13 Q Well, four abstracts, four to five</p> <p>14 reviewers each --</p> <p>15 A Oh, you're saying all of it?</p> <p>16 Q Yeah. Combined.</p> <p>17 MS. CURRY:</p> <p>18 Objection.</p> <p>19 MS. THOMPSON:</p> <p>20 Q Would you agree that there have been at</p> <p>21 least 25 eyes on this research?</p> <p>22 A Uh-huh. Some could have overlapped.</p> <p>23 MS. GARBER:</p> <p>24 Or 50 eyes, since there's two.</p>
<p style="text-align: center;">Page 391</p> <p>1 MS. CURRY:</p> <p>2 Object to the form.</p> <p>3 A That, I don't know.</p> <p>4 MS. THOMPSON:</p> <p>5 Q And -- and you'll agree that the</p> <p>6 mutation, the SNP data, was presented as a poster</p> <p>7 at this year's SGO meeting; correct?</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A I didn't -- I didn't go to that poster,</p> <p>11 so I don't know what was on it. If it was a --</p> <p>12 if it was similar to the paper, I would assume</p> <p>13 so.</p> <p>14 MS. THOMPSON:</p> <p>15 Q Okay. So if you have the manuscript</p> <p>16 that was reviewed by at least two reviewers and</p> <p>17 the editors of Gynecologic Oncology, you have the</p> <p>18 manuscript that was reviewed by at least one</p> <p>19 editor -- one reviewer and editor for</p> <p>20 Reproductive Sciences. You have abstracts that</p> <p>21 are each reviewed by four to five reviewers. He</p> <p>22 also has a book chapter that was reviewed,</p> <p>23 peer-reviewed by editors which included this</p> <p>24 data.</p>	<p style="text-align: center;">Page 393</p> <p>1 MS. THOMPSON:</p> <p>2 Q Fifty eyes.</p> <p>3 Are you aware of any other reviewers</p> <p>4 that raised the serious concerns that you seem to</p> <p>5 have with Dr. Saed's paper --</p> <p>6 MS. CURRY:</p> <p>7 Object to the form.</p> <p>8 MS. THOMPSON:</p> <p>9 Q -- and -- and research?</p> <p>10 A I don't know any of the reviewers for</p> <p>11 the abstracts or the SGO. That's all kept</p> <p>12 confidential. So none of them have -- I haven't</p> <p>13 any firsthand knowledge that they said to me.</p> <p>14 But the review process hasn't raised -- hasn't</p> <p>15 necessarily raised the issues that I've raised.</p> <p>16 Q Okay.</p> <p>17 A But that doesn't change my opinion.</p> <p>18 Q I didn't ask you, actually. If it did,</p> <p>19 I didn't expect it to.</p> <p>20 I want to go through -- oh.</p> <p>21 (DEPOSITION EXHIBIT NUMBER 32 WAS</p> <p>22 MARKED FOR IDENTIFICATION.)</p> <p>23 MS. THOMPSON:</p> <p>24 Q And did you -- did you review</p>

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<p>1 Dr. Saed's review article published in 2 Gynecologic Oncology in 2017?</p> <p>3 A I think I saw this. Is this on 4 oxidative stress?</p> <p>5 Q Yes.</p> <p>6 A Yeah. Yeah.</p> <p>7 Q And -- and do you know if this review 8 article was invited or submitted and 9 peer-reviewed in the process?</p> <p>10 A I don't know.</p> <p>11 Q But, as you've testified before, and 12 typically authors of review articles in reputable 13 journals are felt to be experts in the field; 14 correct?</p> <p>15 MS. CURRY: 16 Object to the form.</p> <p>17 A They generally are.</p> <p>18 MS. THOMPSON:</p> <p>19 Q And --</p> <p>20 MS. CURRY: 21 Did you mark this as an exhibit?</p> <p>22 MS. EVERETT: 23 It's Exhibit 32.</p> <p>24 MS. THOMPSON:</p>	<p>1 MS. THOMPSON: 2 Q Yes.</p> <p>3 A It's not the same phrase. Essential 4 role -- actually, the essential role here is 5 pretty narrow. But it -- but, you know, I 6 wouldn't quibble about that. It's in the same 7 range.</p> <p>8 Q It's a similar concept that's -- that 9 was published in the review article; correct?</p> <p>10 A Uh-huh.</p> <p>11 MS. CURRY: 12 Object to the form.</p> <p>13 MS. THOMPSON: 14 Q Reading the abstract "Clinical and 15 epidemiological investigations have provided 16 evidence supporting the role of reactive oxygen 17 species, ROS, and reactive nitrogen species, RNS, 18 collectively known as oxidative stress in the 19 etiology of cancer."</p> <p>20 Would you agree with that statement?</p> <p>21 MS. CURRY: 22 Object to the form.</p> <p>23 A Yep.</p> <p>24 MS. THOMPSON:</p>
<p>1 32.</p> <p>2 MS. CURRY: 3 Okay. Thank you.</p> <p>4 MS. THOMPSON: 5 Q And just looking at the abstract on -- 6 well, first on the highlights -- this review 7 article updates the role of oxidative stress and 8 the pathogenesis of ovarian cancer. 9 The first highlight is "Oxidative 10 Stress Plays an Essential Role in the 11 Pathogenesis of Ovarian Cancer."</p> <p>12 A Where are you? I'm sorry.</p> <p>13 Q The highlights at the top.</p> <p>14 A Oh. The bullet points?</p> <p>15 Q Bullet point, highlights.</p> <p>16 A Okay.</p> <p>17 Q And you'll agree that -- that statement 18 is essentially the same as the one in the talcum 19 powder article that was asked to be removed 20 because of the data not supporting that 21 statement; correct?</p> <p>22 MS. CURRY: 23 Object to the form.</p> <p>24 A You're going on submission?</p>	<p>1 Q "Exogenous factors such as chronic 2 inflammation, infection and hypoxia are major 3 sources of cellular oxidative stress." 4 Would you agree with that statement?</p> <p>5 MS. CURRY: 6 Object to the form.</p> <p>7 A Well, I would just refine it to say 8 they were sources. I don't know if they're the 9 major sources. In certain conditions there may 10 be other sources. So it's a little bit of a 11 generality.</p> <p>12 MS. THOMPSON: 13 Q "Specifically oxidative stress plays an 14 important role in the pathogenesis, 15 neoangiogenesis and dissemination of local or 16 distant ovarian cancer, as it is known to induce 17 phenotypic modifications of tumor cells by 18 crosstalk between tumor cells and the surrounding 19 stroma."</p> <p>20 Do you agree with that statement?</p> <p>21 A Well, that's a mouthful. There's a lot 22 in there, and I'm not so sure I know exactly what 23 he's talking about. Pathogenesis is pretty general. Blood vessel formation is a different</p>

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<p>1 process. So --</p> <p>2 Q But certainly the reviewers and the</p> <p>3 editors of the journal, when they published the</p> <p>4 review article --</p> <p>5 A Uh-huh.</p> <p>6 Q -- thought that was accurate</p> <p>7 information; correct?</p> <p>8 A They did.</p> <p>9 MS. CURRY:</p> <p>10 Object to the form.</p> <p>11 A Yeah.</p> <p>12 MS. THOMPSON:</p> <p>13 Q Going to Table 1 on page 598, that's a</p> <p>14 "Summary of the Oxidant and Antioxidant</p> <p>15 Expression and Sensitive and Chemoresistant</p> <p>16 Ovarian Cancer." You'll agree that these were</p> <p>17 essentially the same markers that Dr. Saed</p> <p>18 studied in the talcum powder experiments;</p> <p>19 correct?</p> <p>20 MS. CURRY:</p> <p>21 Object to the form.</p> <p>22 MS. THOMPSON:</p> <p>23 Q NPO, INOS?</p> <p>24 A I think so. I think so. I'm just</p>	<p>1 MS. THOMPSON:</p> <p>2 Q But the -- but the markers are the</p> <p>3 same, essentially?</p> <p>4 MS. CURRY:</p> <p>5 Object to the form.</p> <p>6 A The markers are the same.</p> <p>7 MS. THOMPSON:</p> <p>8 Q And they're published in this review</p> <p>9 article, correct, in Gynecologic Oncology?</p> <p>10 A They're reported here and published.</p> <p>11 Q And you'll agree there have been some</p> <p>12 other molecular studies relating to talcum powder</p> <p>13 and cell culture; correct?</p> <p>14 MS. CURRY:</p> <p>15 Object to the form.</p> <p>16 A I believe so.</p> <p>17 MS. THOMPSON:</p> <p>18 Q Are you familiar with a Shukla paper?</p> <p>19 A Yes, I am.</p> <p>20 Q I'll mark the Shukla paper Exhibit 33.</p> <p>21 (DEPOSITION EXHIBIT NUMBER 33 WAS</p> <p>22 MARKED FOR IDENTIFICATION.)</p> <p>23 MS. THOMPSON:</p> <p>24 Q Okay. And this paper was published in</p>
<p style="text-align: center;">Page 399</p> <p>1 checking all of them. Did they --</p> <p>2 Q And generally speaking.</p> <p>3 A Certainly the lower list is all in</p> <p>4 there, yeah.</p> <p>5 Q So -- so these -- these oxidants,</p> <p>6 antioxidants that Dr. Saed studied with the</p> <p>7 talcum powder, he had published before; correct?</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A Well, this is a review article. He's</p> <p>11 not publishing primary data right now. He's just</p> <p>12 noting it.</p> <p>13 MS. THOMPSON:</p> <p>14 Q A review article noting the relevance</p> <p>15 of those assays for oxidative stress in ovarian</p> <p>16 cancer; correct?</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 A Well, again, I'm refining that a little</p> <p>20 bit because this table really looks for</p> <p>21 expression comparing standard ovarian cancer to</p> <p>22 chemoresistance. That's really not what this</p> <p>23 paper is about. So it's kind of apples and</p> <p>24 oranges.</p>	<p style="text-align: center;">Page 401</p> <p>1 2008; correct?</p> <p>2 MS. CURRY:</p> <p>3 Object to the form.</p> <p>4 MS. THOMPSON:</p> <p>5 Q Sorry. Received in --</p> <p>6 A That was in '9.</p> <p>7 Q In formal form, 2008.</p> <p>8 MS. CURRY:</p> <p>9 Do you have a copy?</p> <p>10 A This is in 2009, I have it.</p> <p>11 MS. THOMPSON:</p> <p>12 Q The title is "Alterations in Gene</p> <p>13 Expression in Human Mesothelia Cells Correlate</p> <p>14 with Mineral Pathogenicity."</p> <p>15 Is that the title of this paper that</p> <p>16 you have?</p> <p>17 A Yes. Yes.</p> <p>18 Q Okay. And it was published in --</p> <p>19 A I have it 2009.</p> <p>20 Q Oh. No. We're looking at -- I'm</p> <p>21 looking at that received in final form, and</p> <p>22 you're -- when it actually appeared. You're</p> <p>23 correct. 2009.</p> <p>24 And this paper looked at cell culture</p>

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<p>1 with asbestos applied; correct?</p> <p>2 A This looked at asbestos, nonfibrous</p> <p>3 talc, and titanium dioxide.</p> <p>4 Q Correct.</p> <p>5 A Or glass beads.</p> <p>6 Q And if you'll turn to Table 2, it</p> <p>7 reports on gene expression and mesothelial cells</p> <p>8 at low and high doses at 8 and 24 hours for the</p> <p>9 low dose and 8 hours for the high dose. Correct?</p> <p>10 A This is genes that are affected by</p> <p>11 asbestos.</p> <p>12 Q Correct.</p> <p>13 And, then, if you'll look at table --</p> <p>14 A And this -- sorry.</p> <p>15 Q -- Table 3, which are the genes</p> <p>16 upregulated by nonfibrous talc, you'll see that</p> <p>17 testing was done at 8 hours at low and high dose.</p> <p>18 And it appears that there was no testing done at</p> <p>19 24 hours for talc.</p> <p>20 Is that your understanding?</p> <p>21 A I believe so.</p> <p>22 Q And, yet, there --</p> <p>23 A I'm sorry. Can I refine that?</p> <p>24 MS. CURRY:</p>	<p>1 Q Yeah, ATF.</p> <p>2 And those are cancer genes; correct?</p> <p>3 Or genes affiliated -- associated with cancer?</p> <p>4 MS. CURRY:</p> <p>5 Object to the form.</p> <p>6 A Well, a lot of genes are.</p> <p>7 AFT3 --</p> <p>8 MS. THOMPSON:</p> <p>9 Q ATF3 and interleukin 8 are often</p> <p>10 studied in relationship to cancer association;</p> <p>11 correct?</p> <p>12 MS. CURRY:</p> <p>13 Object to the form.</p> <p>14 A I'd say interleukin 8. I don't -- I</p> <p>15 know of less data for ATF3. It's a transcription</p> <p>16 factor, so I don't know the story there.</p> <p>17 But your original question, these are</p> <p>18 statistically significant increases at 8 hours</p> <p>19 for talc; right?</p> <p>20 MS. THOMPSON:</p> <p>21 Q And 24 hours for talc was not</p> <p>22 performed; correct?</p> <p>23 MS. CURRY:</p> <p>24 Object to the form.</p>
<p>1 Object to the form. Sorry.</p> <p>2 A They were -- it was checked but the</p> <p>3 changes were not observed.</p> <p>4 MS. THOMPSON:</p> <p>5 Q Where do you see that?</p> <p>6 A Well, that may be -- hang on. "These</p> <p>7 are mesothelial cells..." Yeah. Right --</p> <p>8 assuming I'm reading this right.</p> <p>9 Right below the table it says "...were</p> <p>10 initially -- were observed initially with talc at</p> <p>11 8 hours. However, these changes were not</p> <p>12 observed at 24 hours. Suggesting that the human</p> <p>13 mesothelial cells adapt to this mineral."</p> <p>14 Q If you'll look at Table -- at Figure</p> <p>15 4 --</p> <p>16 A Figure 4.</p> <p>17 Q -- you do see that there are</p> <p>18 significant increases in both nonfibrous talc and</p> <p>19 the crocidolite asbestos; correct?</p> <p>20 MS. CURRY:</p> <p>21 Object to the form.</p> <p>22 A So this is quantitative PCR of two</p> <p>23 genes; right? This is ATF3?</p> <p>24 MS. THOMPSON:</p>	<p>1 A It was performed but they didn't see</p> <p>2 any changes.</p> <p>3 MS. THOMPSON:</p> <p>4 Q Was it performed at the high dose?</p> <p>5 A Well, let's see. I can't answer that.</p> <p>6 It may be buried in here somewhere. I do -- I do</p> <p>7 note that in this paper they didn't detect a lot</p> <p>8 of gene changes with talc.</p> <p>9 Q They did detect gene changes with talc,</p> <p>10 did they not?</p> <p>11 MS. CURRY:</p> <p>12 Object to the form.</p> <p>13 A Well, they didn't detect a lot. There</p> <p>14 were some.</p> <p>15 MS. THOMPSON:</p> <p>16 Q I didn't ask if there were a lot.</p> <p>17 There were gene changes with talc?</p> <p>18 A Uh-huh.</p> <p>19 Q Would you consider that a biological</p> <p>20 effect?</p> <p>21 MS. CURRY:</p> <p>22 Object to the form.</p> <p>23 A So, I -- yeah. I don't consider it</p> <p>24 biologic. It may be transcriptional.</p>
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<p>1 MS. THOMPSON:</p> <p>2 Q And you've looked at the Buz'Zard</p> <p>3 paper; correct? The Pycnogenol paper, does that</p> <p>4 sound familiar?</p> <p>5 A Well, I don't recognize that name.</p> <p>6 Yeah. I did look at it.</p> <p>7 Q Okay. I'm gonna mark that as Exhibit</p> <p>8 34.</p> <p>9 (DEPOSITION EXHIBIT NUMBER 34 WAS</p> <p>10 MARKED FOR IDENTIFICATION.)</p> <p>11 MS. THOMPSON:</p> <p>12 Q And you'll agree that this paper looked</p> <p>13 at neoplastic transformation in humans' ovarian</p> <p>14 cell cultures exposed to talc; correct?</p> <p>15 A Well, this gets back to what we</p> <p>16 discussed before. I think they -- they -- the</p> <p>17 title says it and they -- and they argue that</p> <p>18 what they've shown is transformation. I don't --</p> <p>19 I don't agree with that.</p> <p>20 Q Well, at least the authors say that, in</p> <p>21 reading from the abstract, two-thirds of the way</p> <p>22 down, "Talc increased proliferation, induced</p> <p>23 neoplastic transformation and increased ROS</p> <p>24 generation timed dependently in the ovarian cells</p>	<p>1 think about Buz'Zard. I'd have to cross-compare</p> <p>2 that.</p> <p>3 MS. THOMPSON:</p> <p>4 Q Well, I'm just asking you if it refutes</p> <p>5 his findings.</p> <p>6 MS. CURRY:</p> <p>7 Object to the form.</p> <p>8 A No. I -- I'm thinking about that. I</p> <p>9 think his ROS generation is a little bit</p> <p>10 different, Buz'Zard.</p> <p>11 MS. THOMPSON:</p> <p>12 Q The ROS generation may be a little bit</p> <p>13 different, but it does show ROS generation in</p> <p>14 that paper; correct?</p> <p>15 MS. CURRY:</p> <p>16 Object to the form.</p> <p>17 A Now, the Buz'Zard was -- was, for lack</p> <p>18 of a better term, bizarre, because there were</p> <p>19 differential effects in terms of production of</p> <p>20 ROS depending on the concentration. So I found</p> <p>21 it very difficult. And the interpretation that</p> <p>22 they had was, I thought, misleading.</p> <p>23 MS. THOMPSON:</p> <p>24 Q But the question was: Did it in any</p>
<p style="text-align: center;">Page 407</p> <p>1 and dosed dependently in the p.m."</p> <p>2 And that's at least what the authors</p> <p>3 conclude; right?</p> <p>4 A That's what they say in the abstract,</p> <p>5 yes.</p> <p>6 Q And also conclude that "The data</p> <p>7 suggests that talc may contribute to ovarian</p> <p>8 neoplastic transformation" --</p> <p>9 A Where are you now? I'm sorry. The</p> <p>10 next sentence?</p> <p>11 Q Next-to-last sentence.</p> <p>12 A Yep.</p> <p>13 Q "The data suggests that talc may</p> <p>14 contribute to ovarian neoplastic transformation</p> <p>15 and Pyc reduced the talc-induced transformation."</p> <p>16 That's what the authors concluded;</p> <p>17 correct?</p> <p>18 A That's what they say.</p> <p>19 Q Do either the Shukla paper or the</p> <p>20 Buz'Zard paper refute Dr. Saed's research</p> <p>21 findings?</p> <p>22 MS. CURRY:</p> <p>23 Object to the form.</p> <p>24 A I don't think Shukla does. I'd have to</p>	<p style="text-align: center;">Page 409</p> <p>1 way refute Dr. Saed's findings?</p> <p>2 MS. CURRY:</p> <p>3 Object to the form.</p> <p>4 A In -- in terms of comparing this to</p> <p>5 that?</p> <p>6 MS. THOMPSON:</p> <p>7 Q Yes.</p> <p>8 A I'd have to take a close look at that.</p> <p>9 It's not something I thought about.</p> <p>10 Q Okay. But there's nothing that's</p> <p>11 obvious that refutes Dr. Saed's --</p> <p>12 A It's not leaping out to me.</p> <p>13 (DEPOSITION EXHIBIT NUMBER 35 WAS</p> <p>14 MARKED FOR IDENTIFICATION.)</p> <p>15 MS. THOMPSON:</p> <p>16 Q Okay. I'm marking as Exhibit 35 a</p> <p>17 paper by Akhtar from 2010.</p> <p>18 Have you seen this paper?</p> <p>19 A This one, I don't think I reviewed.</p> <p>20 Let me just see if it's on my list. No.</p> <p>21 Q And are you aware from Dr. Saed's</p> <p>22 deposition that he referred to the -- this paper</p> <p>23 to establish his dosages for the talc experiments</p> <p>24 that Dr. Saed performed?</p>

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	<p>1 A In terms of what he did?</p> <p>2 Q Yes.</p> <p>3 A No, I didn't. I'm not aware of that</p> <p>4 from his deposition.</p> <p>5 Q Looking at the paper --</p> <p>6 A Yeah.</p> <p>7 Q -- does that look reasonable?</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A This is way out of my purview with iron</p> <p>11 mediated lipid peroxidase in A459 cells, which</p> <p>12 are lung cancer. I don't know the relevance of</p> <p>13 this to what we're addressing here.</p> <p>14 MS. THOMPSON:</p> <p>15 Q Well, let's read what he says --</p> <p>16 A Sure.</p> <p>17 Q -- in the abstract.</p> <p>18 "Talc particles, the basic ingredient</p> <p>19 in different kinds of talc-based cosmetic and</p> <p>20 pharmaceutical products pose a health risk to</p> <p>21 pulmonary and ovarian systems due to domestic and</p> <p>22 occupational exposures."</p> <p>23 Is that what the authors say?</p> <p>24 A Correct.</p>	<p>1 MS. THOMPSON:</p> <p>2 Q Well, it's the first statement of the</p> <p>3 abstract.</p> <p>4 A Right.</p> <p>5 Q Do you think that's just an irrelevant</p> <p>6 statement, that they put as the first -- the</p> <p>7 introductory sentence to their paper?</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A Well, I think that's their supposition.</p> <p>11 They make that statement. I get it. But that</p> <p>12 doesn't mean that this experiment is relevant to</p> <p>13 that.</p> <p>14 MS. THOMPSON:</p> <p>15 Q I'm asking do the authors think it was</p> <p>16 relevant?</p> <p>17 MS. CURRY:</p> <p>18 Object to the form.</p> <p>19 A You'd have to address it with them. I</p> <p>20 don't know.</p> <p>21 MS. THOMPSON:</p> <p>22 Q "The talc particles, the basic</p> <p>23 ingredient in different kinds of talc-based</p> <p>24 cosmetic and pharmaceutical products pose a</p>
	<p style="text-align: center;">Page 411</p> <p>1 Q So at least the authors thought that</p> <p>2 this experiment had relevance to talc-based</p> <p>3 cosmetic products; correct?</p> <p>4 MS. CURRY:</p> <p>5 Object to the form.</p> <p>6 A Yeah. I think it's in that sentence.</p> <p>7 MS. THOMPSON:</p> <p>8 Q And at least the authors thought that</p> <p>9 these experiments had relevance to the ovarian</p> <p>10 system; correct?</p> <p>11 MS. CURRY:</p> <p>12 Object to the form.</p> <p>13 A Well, they mentioned it. And as a -- I</p> <p>14 think as a premise to the experiment. That</p> <p>15 doesn't mean it's relevant.</p> <p>16 MS. THOMPSON:</p> <p>17 Q Well, it's a -- you would assume that</p> <p>18 if it's a premise to do the experiment, that they</p> <p>19 thought the experiments would be relevant to the</p> <p>20 question that they're asking; correct?</p> <p>21 MS. CURRY:</p> <p>22 Object to the form.</p> <p>23 A There's no question there. That's a</p> <p>24 statement. It's in the --</p>	<p style="text-align: center;">Page 413</p> <p>1 health risk to pulmonary and ovarian systems due</p> <p>2 to domestic and occupational exposure."</p> <p>3 And then they go on to why they're</p> <p>4 studying talc particles.</p> <p>5 Is -- is it your testimony that you</p> <p>6 don't know whether the authors thought that was</p> <p>7 relevant or not?</p> <p>8 MS. CURRY:</p> <p>9 Object to the form.</p> <p>10 A Well, it's speculation. I don't know</p> <p>11 what was in their mind. I can read this. I see</p> <p>12 what they did. And that opening statement is,</p> <p>13 again, sort of setting the -- setting the plate.</p> <p>14 But is this system relevant to that? I don't</p> <p>15 know. Lipid peroxidation --</p> <p>16 MS. THOMPSON:</p> <p>17 Q But -- but you would agree that the</p> <p>18 peer-reviewers and the editors of this journal</p> <p>19 accepted this paper with the introduction that</p> <p>20 talc particles posed a risk to pulmonary and</p> <p>21 ovarian systems and that the investigators at</p> <p>22 least did the experiments and published the</p> <p>23 paper; correct?</p> <p>24 MS. CURRY:</p>

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<p>1 Object to the form.</p> <p>2 A Did the work and published the paper.</p> <p>3 Agree.</p> <p>4 MS. THOMPSON:</p> <p>5 Q And in the conclusion, the authors</p> <p>6 state "We have presented a preliminary data on</p> <p>7 the toxicity response elicited by the two types</p> <p>8 of talc nano particles depending on their</p> <p>9 different geologic origin," and then go on to</p> <p>10 conclude, the end, "Data clearly suggests that</p> <p>11 exposure to talc, particularly nanopowder, should</p> <p>12 be protected in humans at risk of occupational as</p> <p>13 well as domestic exposure."</p> <p>14 That's the conclusions of the authors</p> <p>15 based on this research; correct?</p> <p>16 A That's the last sentence? Is that the</p> <p>17 last sentence?</p> <p>18 Q Yes.</p> <p>19 A Yeah. That's what they say.</p> <p>20 Q That is in the conclusion?</p> <p>21 A That's what they say.</p> <p>22 Q And that is the "Conclusion" section of</p> <p>23 the paper; correct?</p> <p>24 A Correct.</p>	<p>1 Object to the form.</p> <p>2 A Well, I just saw it. I haven't</p> <p>3 reviewed it. I would be concerned that they're</p> <p>4 in a completely different cell system. And, as</p> <p>5 you know, there's just huge differences in tissue</p> <p>6 responses.</p> <p>7 MS. THOMPSON:</p> <p>8 Q Would that automatically make it</p> <p>9 irrelevant, in your mind?</p> <p>10 MS. CURRY:</p> <p>11 Object to the form.</p> <p>12 A I would -- I'd like to read the paper.</p> <p>13 But I'd be concerned. I would start out with a</p> <p>14 certain concern about that and then go through</p> <p>15 the paper.</p> <p>16 MS. THOMPSON:</p> <p>17 Q Okay. We can go off the record, and</p> <p>18 you -- you can look at the paper.</p> <p>19 A Okay.</p> <p>20 VIDEOGRAPHER:</p> <p>21 Off the record at 5:38 p.m.</p> <p>22 (OFF THE RECORD.)</p> <p>23 VIDEOGRAPHER:</p> <p>24 We're back on the record at 5:40 p.m.</p>
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<p>1 (DEPOSITION EXHIBIT NUMBER 36 WAS</p> <p>2 MARKED FOR IDENTIFICATION.)</p> <p>3 MS. THOMPSON:</p> <p>4 Q I'm marking as Exhibit 36 another paper</p> <p>5 by Akhtar and colleagues published in 2012.</p> <p>6 Have you seen that paper, Dr. Birrer?</p> <p>7 A No.</p> <p>8 Q This paper is titled "Cytotoxicity and</p> <p>9 Apoptosis" --</p> <p>10 MS. CURRY:</p> <p>11 Do you have a copy? Sorry.</p> <p>12 MS. THOMPSON:</p> <p>13 I'm sorry.</p> <p>14 MS. CURRY:</p> <p>15 Thank you.</p> <p>16 MS. THOMPSON:</p> <p>17 Q This paper is titled "Cytotoxicity and</p> <p>18 Apoptosis Induction by Nano-Scale Talc Particles</p> <p>19 From Two Different Geographical Regions in Human</p> <p>20 Lung Epithelial Cells."</p> <p>21 Is it your opinion that this paper is</p> <p>22 irrelevant because it tested the biological</p> <p>23 effects of talc in human lung epithelial cells?</p> <p>24 MS. CURRY:</p>	<p>1 MS. THOMPSON:</p> <p>2 Q Dr. Birrer, this article titled</p> <p>3 "Cytotoxicity and Apoptosis Induction by</p> <p>4 Nano-Scale Talc Particles from Two Different</p> <p>5 Geographical Regions in Human Lung Epithelial</p> <p>6 Cells" is by the same authors of the paper we</p> <p>7 just discussed; right?</p> <p>8 A Correct. I don't know if they're all</p> <p>9 on here, but it's the same group.</p> <p>10 Q Same group.</p> <p>11 A Yeah.</p> <p>12 Q Going to the last sentence on the first</p> <p>13 page in the introduction, the authors state:</p> <p>14 "Epidemiologic evidence also suggest a possible</p> <p>15 association between genital use of talcum powder</p> <p>16 and risk of ovarian cancer. Talc also appears to</p> <p>17 induce reactive oxygen, ROS, generation,</p> <p>18 oxidative stress, and inflammation."</p> <p>19 Is that what the authors state</p> <p>20 regarding the epidemiology of talcum powder and a</p> <p>21 reason for studying the cellular response?</p> <p>22 MS. CURRY:</p> <p>23 Object to the form.</p> <p>24 A So the first statement is about</p>

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<p>1 epidemiologic evidence. The second statement is 2 about reactive oxygen species. And they don't 3 say anything about why there's a reason to study. 4 They just make those statements. 5 MS. THOMPSON: 6 Q Is it your testimony that they would 7 just put -- put that statement in randomly in the 8 introduction to their paper about cytotoxicity and 9 apoptosis with talc particles? 10 MS. CURRY: 11 Object to the form. 12 A It wouldn't be random. But, again, I 13 think it's just a piece of information that this 14 has been studied before in a different system. 15 MS. THOMPSON: 16 Q And you would -- and they cite to 17 Buz'Zard, the paper we just reviewed; correct? 18 A Uh-huh. Yes. 19 Q And they start -- cite to Langseth; 20 correct? 21 A Yes. 22 Q And in previous testimony you have 23 testified that you think that Langseth is a -- is 24 a high-quality paper. Do you remember that?</p>	<p>1 Is that what the authors conclude from 2 the experiments that they did on nano talc 3 particles? 4 A That's what they say right there, yeah. 5 Q And we've established earlier that the 6 baby powder is a mixed particle-sized product; 7 correct? 8 MS. CURRY: 9 Object to the form. 10 A Well, we talked about talc particles, 11 and I simply said my understanding is not as a 12 mineralogist, but my understanding is a different 13 spectrum. I don't -- 14 MS. THOMPSON: 15 Q And do you know one way or the other 16 whether some of the particles in baby powder 17 could be classified as nano particles? 18 A No, I don't know that. 19 Q Do either of the Akhtar papers that we 20 just looked at refute Dr. Saed's research? 21 MS. CURRY: 22 Object to the form. 23 A The only comment I would make on that 24 is that this -- and again, I looked at this for</p>
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<p>1 MS. CURRY: 2 Object to the form. 3 A Yeah. I'd have to see that. 4 MS. THOMPSON: 5 Q Okay. 6 A But I'm more familiar with Buz'Zard. 7 Q Okay. Well, we just looked at that 8 one; right? 9 But at least -- 10 A Yeah. 11 Q -- that's what the authors state in 12 their introduction -- 13 A Yeah. 14 Q -- regarding talc; correct? 15 A Yes. 16 Q And, then, we'll just go to the 17 conclusion. 18 A Uh-huh. 19 Q The last paragraph. "In conclusion, 20 both IN" -- which is Indian nano particles or 21 nano talc -- "and CN" -- which is commercial nano 22 talc particles, "significantly induce 23 cytotoxicity, oxidative stress and apoptosis in 24 human lung epithelial cells."</p>	<p>1 literally five minutes, but I went through some 2 of the figures. This paper shows a lot of 3 cytotoxicity and apoptosis with the effect of 4 talc. That's -- and this is actually in a cancer 5 cell line; right? It's human lung epithelial 6 cells. I don't think they're -- they're at least 7 immortalized. So that strikes me as different 8 than the proliferative effect he's describing. 9 MS. THOMPSON: 10 Q That wasn't my question. 11 A Okay. 12 Q My question: Do these results refute 13 Dr. Saed's work? 14 MS. CURRY: 15 Object to the form. 16 A Well, this is in lung cancer, so it's 17 pretty much irrelevant. 18 MS. THOMPSON: 19 Q And where -- where are you finding that 20 it's in lung cancer cells? 21 A Human lung epithelial A549 cells. I 22 worked with them quite a bit. It's a lung cancer 23 cell line. It's an adenocarcinoma. Top of page 24 396.</p>

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	<p>1 Q Human lung epithelial cells?</p> <p>2 A Uh-huh.</p> <p>3 Q Those are cancer cells?</p> <p>4 A A549, if it's the same A549 which I know about, which I think it is, that's an adenocarcinoma.</p> <p>7 Q Do you see anywhere in the paper where it describes those as cancer cells?</p> <p>9 A Just let me look at the back. I don't see it, although I've rushed through this. But I don't see it.</p> <p>12 Q I know. I don't see it either.</p> <p>13 They're just described as human lung epithelial cells, which doesn't sound like they were considered to be cancer cells.</p> <p>16 I'm not sure I got the answer to the question "Is there anything in either of these Akhtar papers that refutes Dr. Saed's findings?"</p> <p>19 A No.</p> <p>20 MS. CURRY: Object to the form.</p> <p>22 MS. THOMPSON: Q Do both of these Akhtar papers demonstrate biological effect from talc particles</p>	<p>1 MS. CURRY: 2 Oh. I'm so sorry. Thank you.</p> <p>3 EXAMINATION</p> <p>4 BY MS. CURRY: 5 Q Dr. Birrer, you have reviewed Dr. Clarke-Pearson's expert report; correct?</p> <p>7 A Yes.</p> <p>8 Q Do you think his opinions overall are based on sound science?</p> <p>10 A No.</p> <p>11 Q Do you defer to him on any issue presented in this case?</p> <p>13 A No.</p> <p>14 Q Do you defer to any of the plaintiffs' experts on any issues presented in this case?</p> <p>16 A No.</p> <p>17 MS. CURRY: 18 I have no further questions. 19 Thank you.</p> <p>20 MS. THOMPSON: 21 I'm done.</p> <p>22 VIDEOGRAPHER: 23 Okay. This concludes this deposition. 24 The time is 6:04 p.m. We're off the</p>
	<p>1 on cell culture --</p> <p>2 MS. CURRY: Object to --</p> <p>3 MS. THOMPSON: 5 Q -- lines?</p> <p>6 MS. CURRY: 7 Object to the form.</p> <p>8 A I would say yes, that there is some activity.</p> <p>10 MS. THOMPSON: 11 If we can take just a short break, I think I'm finished.</p> <p>13 VIDEOGRAPHER: 14 Off the record at 5:48 p.m. (OFF THE RECORD.)</p> <p>16 VIDEOGRAPHER: 17 We're back on the record at 6:03 p.m.</p> <p>18 MS. THOMPSON: 19 Dr. Birrer, I have no further questions. Thank you for your time today.</p> <p>21 MS. CURRY: 22 I have just a few follow-up questions.</p> <p>23 VIDEOGRAPHER: 24 Counsel, your microphone.</p>	<p>1 record. 2 (Deposition concluded at 6:04 p.m.)</p> <p>3</p> <p>4</p> <p>5</p> <p>6</p> <p>7</p> <p>8</p> <p>9</p> <p>10</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p>

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1 C E R T I F I C A T E	1 - - - - -
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1 INSTRUCTIONS TO WITNESS	1
2	2 ACKNOWLEDGMENT OF DEPONENT
3	3
4	4 I, _____, do
5	5 hereby certify that I have read the
6	6 foregoing pages, and that the same is
7	7 a correct transcription of the answers
8	8 given by me to the questions therein
9	9 propounded, except for the corrections or
10	10 changes in form or substance, if any,
11	11 noted in the attached Errata Sheet.
12	12
13	13
14	14
15	15 MICHAEL BIRRER, M.D., PH.D. DATE
16	16
17	17
18	18 Subscribed and sworn
19	19 to before me this
20	20 ____ day of _____, 20 ____.
21	21 My commission expires: _____
22	22
23	23
24	24 Notary Public

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1 LAWYER'S NOTES

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